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DISEASES CAUSED BY BACTERIA AND FUNGI

WAHL, R. & FOUACE, J. (1952). Sur les principes de classification des staphylocoques pathogènes par la méthode des phages. **[Phage classification of pathogenic staphylococci.]**—*Ann. Inst. Pasteur.* **82,** 542-555. **547**

Staphylococcal phages were classified into four main groups: the first three groups included the more specific phages and could be divided into sub-groups. It was possible to correlate the phage groups with strains of pathogenic staphylococci and there was some correlation between phage grouping and agglutination tests.—E. G. WHITE.

BELL, W. B. & VELIZ, M. O. (1952). **Production of enterotoxin by staphylococci recovered from the bovine mammary gland.**—*Vet. Med.* **47,** 321-322. [Authors' summary modified.] **548**

Twenty-five of 37 cultures of staphylococci isolated from cows' udders produced enterotoxin under conditions of the experiment. Cultural and biochemical characteristics alone could not be relied upon to distinguish the enterotoxin-producing strains from those lacking this property.

JUNCHER, H., MAGNUSSON, I. & RØMER, O. (1950). Målinger af penicillinindholdet i maelk efter intramammaere infusioner af penicillin-holdige praeparater. **[Measurement of penicillin content of milk after intramammary infusions of penicillin preparations.]**—*Nord Vet.-Med.* **2,** 765-788. [In Norwegian. English and German summaries. Abst. from English summary.] **549**

Suspensions of sodium penicillin in water and in oil respectively given by intramammary injection did not remain in the udder for long, but when aluminium stearate was added to the oily suspension it was effective for three days. Procaine penicillin used in the same way was not more effective.—F. R. HARRIS.

PIERCE, W. A., JR. & WHITE, A. G. C. (1952). **The role of certain sugars in the production of capsular polysaccharide and lactic acid by** *Streptococcus pyogenes.*—*J. Bact.* **63,** 301-307. **550**

The authors determined the effect of glucose, sucrose, fructose, lactose and galactose on the hyaluronic acid production of four mucoid phase strains of *Str. pyogenes* in liquid medium. —E. G. WHITE.

SPENCER, G. R. & LASMANIS, J. (1952). **Reservoirs of infection of** *Micrococcus pyogenes* **in bovine mastitis.**—*Amer. J. vet. Res.* **13,** 500-503. [Abst. from authors' conclusions.] **551**

The principal extramammary reservoirs for coagulase-producing haemolytic micrococci discovered were the skin of the teats and teat cups of the milking machine. Disinfection of teat cups by dipping in two successive pails of sodium hypochlorite solution containing chlorine was shown to be ineffective in many cases for complete elimination of contamination, especially of haemolytic and coagulase-positive micrococci. Many of the organisms remained alive on dry straw for 49 days.

SEVAG, M. G. & ROSANOFF, E. I. (1952). **Mechanism of the development of resistance to streptomycin. I. Origin of resistant strains.**—*J. Bact.* **63,** 243-251. **552**

The ability of *Micrococcus pyogenes* var. *aureus* to develop resistance to streptomycin is linked with its ability to synthesize aspartic acid and phenylalanine. Such resistant cells arise only after the action of streptomycin; they are not present in the original sensitive population. —MALCOLM WOODBINE.

NOTE.—*The* V.B. *references given in square brackets now refer to abstract numbers and not to page numbers.*

CRONIN, M. T. I. (1952). **The characters of streptococci isolated from the uteri of Thoroughbred mares in Ireland.**—*J. comp. Path.* **62,** 260-265. [Abst. from author's summary.] **553**

C. described details of the isolation of 48 strains of streptococci from the uterus of Thoroughbred mares in Ireland. The pathogenicity of the strains and the production of soluble haemolysin varied considerably. All strains belonged to Lancefield's Group C and Edward's Type A (Bazely and Battle's Type 2).

COLLIER, J. R. (1951). **A survey of beta hemolytic streptococci from swine.**—*Proc. 88th Ann. Meet. Amer. vet. med. Ass.* Milwaukee. Aug. 20-23, 1951. pp. 169-172. **554**

67 cultures of β-haemolytic streptococci isolated from pigs were classified as follows:—*Str. equisimilis* (39), *Str. zooepidemicus* (4), Lancefield Group L (13), Lancefield Group E (5), and a group of serologically unclassified strains resembling Group E biochemically (6).

Morbid conditions represented were bacteraemia (25), suppurative arthritis (13), abscesses (11), dermatitis (8), vegetative endocarditis (4), pneumonia (3), abortion (2) and periostitis (one).—J. T. DONE.

CROWLEY, N. (1951). **The effect of amino-acids and other substances on the activity of streptococcal hyaluronidase. With a note on the activity of fractions obtained during the isolation and purification of components of streptococcal hyaluronidase.**—*J. gen. Microbiol.* **5,** 906-918. **555**

The titre of polysaccharidase (hyaluronidase, amylase and depolymerase) from 10 strains of Group A streptococci was increased by incubating with β-alanine, serine, tyrosine, cystine, cysteine or methionine. Activity as a whole also increased on incubation with hyaluronic acid, starch, pectin or dextran. Pantothenate and valine suppressed both polysaccharidase and proteinase activity.—MALCOLM WOODBINE.

DIANA, A. (1951). Ricerche sull'azione di alcuni antibiotici (streptomicina e penicillina) sul *Bacillus anthracis.* **[Actions of streptomycin and of penicillin on *B. anthracis.*]**—*Atti Soc. ital. Sci. vet.* **5,** 445-450. [English and French summaries.] **556**

Prolonged contact of *B. anthracis* cultures with either penicillin or streptomycin, even in very high concentrations, showed the effect of these antibiotics to be entirely bacteriostatic.

—G. P. MARSHALL.

DELPY, L. P. & MIR CHAMSY, H. (1949). Stabilisation des suspensions sporulées de Bacillus anthracis par le sodium éthyl mercuri thiosalicylate. **[Stabilization of spore suspensions of *B. anthracis* by merthiolate.]**—*Arch. Inst. Hessarek.* No. 6. pp. 26-27. **557**

Merthiolate 1:20,000 effectively stabilizes spore suspensions of *B. anthracis* for the purpose of vaccine preparation. The number and antigenic properties of the spores remain unchanged for at least a year, but their germination is checked.—W. R. BETT.

BRUECK, J. W. & BUDDINGH, G. J. (1952). **Isolation of *M. tuberculosis* by inoculation of the yolk sac of embryonated eggs.**—*Proc. Soc. exp. Biol., N.Y.* **80,** 589-591. [Authors' summary slightly modified.] **558**

Acid fast bacilli were readily demonstrated in the yolk of embryos 4 to 6 days after inoculation, into the yolk sac of 5- to 8-day embryonated eggs, of infected material collected from patients with TB.

FANKHAUSER, R. & WYLER, R. (1952). Zur Tuberkulose des Zentralnervensystems bei Fleischfressern. **[TB. of the central nervous system of carnivores.]**—*Schweiz. Arch. Tierheilk.* **94,** 547-554. [English, French and Italian summaries. Abst. from summaries.] **559**

The authors discussed the rare incidence of TB. of the c.n.s. of carnivores and cited five cases in dogs from the literature. The authors know of only one case in a cat. They described this in detail.—ROY MACK.

BRÜGGER, H. (1952). Die bovine Infektion beim Menschen. **[Bovine type TB. in man.]**—*Mh. prakt. Tierheilk.* **4,** 330-336. **560**

During and since the second world war the percentage of tuberculin-positive cattle in Germany has increased. The percentage of positive tuberculin reactors among schoolchildren in the country districts is much higher than in towns and industrial districts; X-ray showed abdominal calcifications in 50% of the positive reactors.

—W. R. BETT.

MARKS, J. (1952). **The treatment of experimental tuberculosis with hyperthermia and streptomycin.**—*Tubercle, Lond.* **33,** 303-305. [Abst. from summary.] **561**

Hyperthermia increased the sensitivity of tubercle bacilli to streptomycin *in vitro,* but did not increase the effectiveness of streptomycin therapy of experimental TB. in g. pigs.

—W. R. BETT.

POPE, H. (1952). **Growth inhibition of tubercle bacilli by analogues of biotin.**—*J. Bact.* **63**, 39-45. 562

The tubercle bacillus synthesizes sufficient biotin for its nutritional needs. Various analogues of biotin were found to inhibit growth of tubercle bacilli by interfering with biotin synthesis.—E. G. WHITE.

BRIEGER, E. M. & GLAUERT, A. M. (1952). **A phase-contrast study of reproduction in mycelial strains of avian tubercle bacilli.**—*J. gen. Microbiol.* **7**, 287-294. [Abst. from authors' summary.] 563

Disintegrating mycelial branches released micro-rods (as small as 0·2μ), which later elongated into bacillary forms. Parts of some mycelia produced filamentous sprouts which grew into entangled nests of filaments, and finally gave rise to spherical colonies of short rods. Some mycelial branches became swollen and very dense and later more transparent. Parallel rows of filaments were revealed lying orientated along the length of the branches. The typical morphology of orientated and non-orientated growth was explained with reference to the modes of development. Growth was preceded by a stage of mycelial proliferation, which was mainly non-acid-fast, but resulted in micro colonies of the normal acid-fast rod. The authors discussed the relation between some atypical structures and L-forms.

HOLMGREN, N. B. & YOUMANS, G. P. (1952). **Studies on the metabolism of virulent and avirulent mycobacteria.**—*Amer. Rev. Tuberc.* **66**, 416-435. [French and Spanish summaries. Abst. from English summary.] 564

Using the minimal inoculum technique, the authors found that H 37 Rv and its avirulent variant, H 37 Ra, have the same generation time in a chemically defined Proskauer and Beck medium. The avirulent variants are more metabolically deficient and do not give the same response to serum and plasma fractions.

—W. R. BETT.

STAUB, H. (1951). Die Wirkung des Antihistamins "Avil" auf die Tuberkulose-Allergie des Meerschweinchens. **[The action of an antihistamine compound on the tuberculin reaction in g. pigs.]**—*Inaug. Diss. Giessen.* pp. 46. 565

When repeated subcutaneous inj. of "avil", a proprietary antihistamine compound, were given for 48 hours, some reduction of the tuberculin skin reaction was demonstrable in tuberculous g. pigs.—R. MARSHALL.

HENLEY, R. R. (1951). **History of the Bureau's work with tuberculin.**—*Proc. 55th Ann. Meet. U.S. live Stk sanit. Ass.* 273-281. 566

An account of the history of tuberculin testing in the U.S.A. from its first use in 1892. The main landmarks over the years include studies of the fatty acids of the tubercle bacillus (1895-98), the development of egg media by Dorset (1902), the establishment of the Tuberculosis Eradication Division (1917), the development of synthetic media for tuberculin production (1927-30) and the substitution of the relatively cheap ammonium glutamate for the more expensive asparagine (1947).

—E. G. WHITE.

LARSEN, A. B. (1952). **The evaluation of acid-fast allergens on sensitized goats.**—*Amer. J. vet. Res.* **13**, 545-548. [Author's summary modified.] 567

Eleven goats artificially sensitized, six with *Mycobact. tuberculosis* var. *bovis*, and 5 with *M. johnei*, were compared with similarly sensitized cattle in the evaluation of chemically fractionated portions of johnin and tuberculin. Measurements of skin reactions resulting from injection of the allergens were compared and the results indicated that goats compare favourably with cattle in evaluating increased specificity of such fractions.

FORD, E. J. H. (1952). **The treatment of Johne's disease in cattle.**—*Brit. vet. J.* **108**, 411-418. [Author's summary modified.] 568

Three cases of Johne's disease in cattle were treated with "T.B.1" [*p*-acetamido-benzaldehyde thiosemicarbazone] and three with streptomycin. No cures were obtained.

FONTANELLI, E. (1952). La dermatite pustulosa mammaria delle pecore e delle capre. **[Pustular dermatitis of the udder in sheep and goats associated with *Corynebacterium*.]**—*Zooprofilassi.* **7**, 261-265. 569

F. described cases of pustular dermatitis of the udder of sheep and goats, developing at the time of parturition, and becoming most severe during lactation. The condition is due to infection with *C. pyogenes*, and may be followed by parenchymatous or even necrotic inflammation of the udder tissue. It is easily distinguished from virus contagious pustular dermatitis and variola and is treated by washing with 2% boric acid solution, and the application of sulphanilamide or penicillin ointment.—I. W. JENNINGS.

LOVELL, R. & COTCHIN, E. (1952). **Studies on *Corynebacterium renale*. IV. Renal lesions in mice produced by other bacteria.**—*J.*

comp. Path. **62,** 245-248. [Authors' summary modified.] 570

The intravenous injection of mice with living suspensions of *C. ovis, C. pyogenes, Bact. viscosum equi, Bact. coli and Staph. aureus* produced renal lesions in a variable proportion of animals. These lesions differed in distribution from those which were observed after the similar administration of living suspensions of *C. renale,* as they were not confined to the medulla but were found also in the cortex. The distribution of the lesions produced by *C. renale* appeared therefore to be specific for that bacterium.

LINDLEY, D. C. & HATFIELD, R. C. (1952). **Observations on the bacterial flora of infertile dairy cows.**—*J. Amer. vet. med. Ass.* **120,** 12-15. 571

Micrococci, *Neisseria,* corynebacteria and other bacteria were isolated from the uterus of infertile dairy cows but were not established as aetiological agents of the condition.

—L. M. JONES.

SHUMAN, R. D. (1951). **Swine erysipelas induced by skin scarification.**—*Proc. 88th Ann. Meet. Amer. vet. med. Ass.* Milwaukee. Aug. 20-23, 1951. pp. 153-160. 572

Definite skin reactions were induced in 36 of 37 non-immune swine by scarification and intradermal inoculation with cultures of *E. rhusiopathiae.* Of 33 strains tested for their ability to elicit skin reactions, 3 were considered unsatisfactory. The reaction was not produced by bacteria-free filtrates of cultures nor in immune animals.—J. T. DONE.

DELPY, L. P. (1949). Immunisation contre les pasteurelloses par un vaccin saponine. **[Immunization against haemorrhagic septicaemia in cattle with a saponin vaccine.]**—*Arch. Inst. Hessarek.* No. 6. pp. 28-31. 573

D. reported success in the immunization of cattle against pasteurellosis, using a vaccine prepared from a virulent culture of *Past. boviseptica,* killed and lysed by the addition of 5% saponin. He warned that samples of saponin originating from different commercial houses show great variation in bactericidal power; some samples are useless for the production of vaccine.—I. W. JENNINGS.

TROPA, E. (1952). Les pasteurelloses et les méthodes d'immunisation les concernant. **[Methods of immunization against pasteurellosis.]**—*Bull. Off. int. Epiz.* **38,** May. pp. 196-208. [Abst. from English summary.] 574

T. described the preparation of antisera and vaccines for pasteurellosis and their use in the field. He also described mixed vaccines against (a) pasteurellosis and anthrax, (b) enterotoxaemia of sheep and pasteurellosis, (c) Newcastle disease, fowl cholera and salmonella infection.

GALTON, M. M., SCATTERDAY, J. E. & HARDY, A. V. (1952). **Salmonellosis in dogs. I. Bacteriological, epidemiological and clinical considerations.**—*J. infect. Dis.* **91,** 1-5. 575

STUCKER, C. L., GALTON, M. M., COWDERY, J. & HARDY, A. V. (1952). **Salmonellosis in dogs. II. Prevalence and distribution in greyhounds in Florida.**—*Ibid.* 6-11. 576

MCELRATH, H. B., JR., GALTON, M. M. & HARDY, A. V. (1952). **Salmonellosis in dogs. III. Prevalence in dogs in veterinary hospitals, pounds and boarding kennels.**—*Ibid.* 12-14. 577

MACKEL, D. C., GALTON, M. M., GRAY, H. & HARDY. A. V. (1952). **Salmonellosis in dogs. IV. Prevalence in normal dogs and their contacts.**—*Ibid,* 15-18. [Authors' summaries modified.] 578

I. Procedures used in the isolation of salmonella from dogs were described, and the relative efficacy of various laboratory procedures compared.

Proteus organisms were prevalent in canine faeces. Of 8,157 rectal swabs from dogs, 2,252 were positive for salmonella. A total of 53 serological types, including three new types, were encountered. Multiple types were found in 412 specimens. Salmonella types which were isolated frequently from dogs were also encountered frequently in man.

Evidence did not permit conclusions as to the significance of salmonella infection in dogs either as a source of spread to man or as a cause of disease in dogs.

II. The nature of the greyhound industry in Florida was described. A survey of *Salmonella* infection was made by culture of all animals in kennels. Of 1602 cultures made from dogs in Jacksonville, 697 were positive and 878 isolations of salmonella were made; in Miami 233 of 946 samples were positive with 251 isolations. An additional 524 cultures were taken during a therapeutic trial on 44 dogs; 460 were positive with 612 isolations. In all, 1518 greyhounds were tested. There were 3072 cultures, which yielded 1390 positive specimens and 1741 isolations of salmonella. The proportion of positive animals increased with the number of examinations, reaching 98% in those cultured five or more times.

Annual minimal attack rates based on monthly cultural findings were in excess of 600

per 100 dogs per annum or an infection every two months. The true rate based on an intensive cultural study of one group appeared to be in the order of three infections per dog per month. There was a seasonal variation, with higher rates in the autumn and early winter. The cleaner kennels had lower rates, but the difference was not marked.

Thirty-five types of salmonella were found, multiple simultaneous infections being detected more frequently than would be expected by chance alone.

Therapeutic trials failed to reveal any significant modification of the infections by aureomycin, chloromycetin, terramycin or sulphadiazine.

III. An account of bacteriological findings on 3459 specimens from dogs in 15 veterinary hospitals, seven pounds and four boarding kennels in eight different cities of Florida. Salmonella was obtained from 525 of 2438 specimens from hospitalized dogs, 71 of 895 specimens from impounded dogs and 21 of 126 specimens from animals in boarding kennels.

There were 701 isolations of salmonella, representing 41 types from 618 positive specimens. The proportion positive in different hospitals, pounds and boarding kennels varied markedly. Localized outbreaks were observed in several hospitals.

Bacteriological surveys of the environment in two hospitals yielded the same salmonella types as those previously found in the dogs from prepared food, utensils, fresh livers, a dust pan and the floor of an exercise pen.

IV. Specimens for bacteriological examination of normal family dogs were procured through community surveys and rabies immunization clinics and in veterinary hospitals (using dogs brought for immunization, bathing, boarding and surgical conditions).

Of 1626 cultures from normal dogs, 244 were positive for salmonella. The 41 types of salmonella encountered were widely distributed but variations in prevalence were found. There was no secure evidence as to the epidemiological significance to man of salmonella infections in the normal family dog.

LUCAS, A., BOULEY, G., PARAF, A. & QUINCHON, C. (1952). Études des réactions aspécifiques et des réactions spécifiques dans les maladies infectieuses à allure lente. (2e note.) **[Specific and non-specific reactions in chronic infectious diseases.]**—*Rec. Méd. vét.* **128**, 477-491. 579

The authors recorded a sex hormone influence on the course of *Salmonella typhimurium* infection in rabbits.—J.D.

DAVIS, F. & BARNES, L. A. (1952). **Suppression of growth of *Salmonella anatum* and *Salmonella oranienburg* by concentration variation of energy sources in a synthetic basal medium.**—*J. Bact.* **63**, 33-38. 580

Growth was inhibited in a basal synthetic medium supplemented with utilizable organic compounds (DL-*alpha*-alanine, sodium citrate, glycerol and lactic acid) at various critical concentrations.—E. G. WHITE.

MOORE, T. & MITCHELL, C. A. (1952). **Bovine brucellosis: a study of questionable animals.**—*Canad. J. comp. Med.* **16**, 250-253. 581

The serum reactions of 828 non-vaccinated adult females in 348 cattle herds with a population of 11,108 were studied for 6 months after the first questionable test. During this period, the percentage of questionable reactors which returned to negative decreased and the percentage which became positive increased as herd infection increased.—R. GWATKIN.

I. SERRA, A. (1951). Nuove ricerche sull'azione del 2-metil-6 ossi-1,4 naftochinone nella cura della brucellosi bovina. **[A naphthoquinone derivative in treatment of bovine brucellosis.]**—*Atti Soc. ital. Sci. vet.* **5**, 403-414. [English and French summaries.] 582

II. SEREN, E., MANTOVANI, G. & RAGNI, M. (1951). Un derivato naftochinonico ad azione vitaminica K (antibrucellina) nella terapia dell' aborto brucellare nei bovini. **[A naphthoquinone derivative in treatment of bovine brucellosis.]**—*Ibid.* 399-403. [English and French summaries.] 583

I. Intravenous doses of either "antibrucellina" (sodium 2-methyl-6-hydroxy-1, 4-naphthoquinone sulphonate) or vitamin K_3, given at a rate of 500-800 mg. daily or on alternate days, prevented abortion in 201 out of 240 cows with brucellosis. In some of these animals the drugs proved bactericidal in that dosage.

II. "Antibrucellina" was given in intravenous doses of 300-400 mg./day, for an average of three days, to 22 brucella infected cows with symptoms of imminent abortion; only three aborted.—G. P. MARSHALL.

OLITZKI, A. L. (1952). **The determination of the most probable numbers of streptomycin-fast cells in brucella cultures and their variability in growing and ageing cultures.**—*J. gen. Microbiol.* **6**, 166-174. 584

The number of resistant brucella cells at various concentrations of streptomycin was de-

termined by the method of most probable numbers. Variations in numbers were seen from culture to culture. There was a relative increase of resistant cells with the age of the culture.
—L. M. JONES.

ALTENBERN, R. A. & HOUSEWRIGHT, R. D. (1951). **Alanine synthesis and carbohydrate oxidation by smooth *Brucella abortus*.**—*J. Bact.* **62,** 97-105. **585**

Smooth brucella cells synthesize alanine both by transamination mechanisms and by direct or reductive amination, and possess enzymes for oxidation of tricarboxylic acid intermediates of the Krebs' cycle.—L. M. JONES.

PICKETT, M. J., NELSON, E. L., HOYT, R. E. & EISENSTEIN, B. E. (1952). **Speciation within the genus *Brucella*. I. Dye sensitivity of smooth brucellae.**—*J. Lab. clin. Med.* **40,** 200-205. [Authors' summary modified.] **586**

The authors described a dye sensitivity test which permitted satisfactory differentiation of species in 25 strains of smooth brucella. The species of two slightly irregular strains were determined by reference to their biochemical and serological reactions. Three strains could not be typed, but all were found to be non-smooth.

BRYANT, M. P. (1952). **The isolation and characteristics of a spirochete from the bovine rumen.**—*J. Bact.* **64,** 325-335. [Author's summary modified.] **587**

Three strains of a spirochete have been isolated in pure culture from bovine rumen contents. One of these, a *Borrelia*, was maintained in pure culture for one year. It grew rapidly at 39°C. on media containing rumen fluid, fermentable sugar, and with an initial pH of 6·5 to 7·0. Many monosaccharides and some disaccharides greatly stimulated its growth in pure culture. Carbon dioxide, ethanol, formic acid, acetic acid, lactic acid and succinic acid were the chief products of the fermentation of glucose by this organism.

It is a normal inhabitant of the rumen of cattle. A morphologically similar type is present in sheep. Other types of spirochetes have also been isolated from sheep and cattle.

SMITH, D. L. T. & PERRY, D. A. (1952). **Bovine leptospirosis [in Canada].**—*Canad. J. comp. Med.* **16,** 294-299. **588**

A brief review of the literature and description of a case of bovine leptospirosis. The organisms were demonstrated in sections of kidney and liver stained by Levaditi's method. Urine is the major factor in spread of the infection. The authors discussed treatment with antibiotics.—R. GWATKIN.

ROBERTS, S. J., YORK, C. J. & ROBINSON, J. W. (1952). **An outbreak of leptospirosis in horses on a small farm.**—*J. Amer. vet. med. Ass.* **121,** 237-242. [Abst. from authors' summary.] **589**

L. pomona was isolated from horses with an acute septicaemic disease. It was reproduced under experimental conditions. Complement-fixing antibodies were present in horses that had recovered, but not in the early stages of infection. It is believed that this is the first instance where *L. pomona* has been isolated from horses.

YORK, C. J. (1951). **Aspects of control in bovine leptospirosis.** — *Proc. 55th Ann. Meet. U.S. live Stk sanit. Ass.* 295-300. **590**

Y. gave preliminary details of a complement-fixation test for bovine leptospirosis. The results of a survey carried out in New York State using this test suggested that 12·8% of cattle were infected. The clin. symptoms of inapparent, mild and severe cases were tabulated. In infected herds the incidence of infection was 50–70%. Mortality was 5% and about one quarter of affected animals showed no symptoms. Urine from calves that had been infected experimentally was infective for g. pigs from 10 days to at least 7 weeks after inoculation and their blood was infective from the 5th to the 10th day.—E. G. WHITE.

HEPPLE, J. R. (1952). **Necrotic enterotoxaemia in a calf due to *Clostridium welchii* Type B.** —*Vet. Rec.* **64,** 633-634. [Abst. from author's summary.] **591**

H. described a case of necrotic enterotoxaemia caused by *Cl. welchii* Type B in an unweaned calf. Of a total of 37 calves born in the same herd four others died possibly from the same disease; the use of concentrated lamb dysentery serum cured four affected calves and prevented further scouring and dysentery in 11 calves born subsequently, these being injected soon after birth.

WEIDENMÜLLER, H. (1952). Über die Eignung des syrischen Goldhamsters (Mesocricetus auratus) als Versuchstier für die Rauschbrand-Pararauschbrand-Differenzierung. **[Use of hamsters for differentiation of *Clostridium chauvoei* and *Cl. septicum*.]**—*Dtsch. tierärztl. Wschr.* **59,** 52-54. **592**

The golden hamster, like most lab. animals, is very variable in its reaction to *Cl. chauvoei*, and cannot be used for the differential diagnosis between *Cl. chauvoei* and *Cl. septicum* infections. The g. pig is the only animal that can be used for this purpose.—A. MAYR-HARTING.

GOŁASZEWSKI, H. (1952). O etiologii bradsotu owiec. **[The aetiology of bradsot.]**—*Méd. vét., Varsovie.* **8,** 163-166. 593

Bradsot in sheep in Poland is caused by *Cl. septicum* or *Cl. gigas*. In *Cl. septicum* infection, the lesions are those of abomasitis; in *Cl. gigas* infection the main lesions are in the liver. Unless P.M. examination is carried out immediately or soon after death, the real nature of the lesions cannot be discovered. G. suggested that the name bradsot should be reserved for *Cl. septicum* infection and that infectious necrotic hepatitis should be used for *Cl. gigas* infection. G. suggested that these anaerobes are not the only factors responsible for bradsot type diseases in sheep and that certain dietetic disorders and deficiency of vitamins A and C may be contributory factors.—J. R. MITCHELL.

SAXINGER, G. & HEINIG, A. (1951). Experimentelle Untersuchungen bei Pferden und Schafen über Eintritt und Dauer der Immunität nach einmaliger Impfung mit Tetanustoxoid-Aluminiumhydroxyd-Schutzimpfstoff (Tetatoxoid-Dessau). **[Duration of immunity in horses and sheep after a single injection of tetanus toxoid-aluminium hydroxide vaccine.]**—*Mh. Vet.-med.* **6,** 434-437. 594

After a single injection of tetanus toxoid treated with aluminium hydroxide, in horses (5–10 ml.) and sheep (1–5 ml.), immunity may last for several weeks; in one recorded case it lasted up to nine months.—F. R. HARRIS.

HORTON-SMITH, C. & LONG, P. L. (1952). **The effect of penotrane on the growth** *in vitro* **of** *Candida albicans* **and** *Aspergillus fumigatus.* — *J. comp. Path.* **62,** 266 - 274. [Authors' summary modified.] 595

Tests carried out *in vitro* have shown that "penotrane" (phenyl-mercuric-dinaphthylmethane-disulphonate) is active against *C. albicans* and *A. fumigatus* at a dilution of 1 : 320,000 and is probably fungicidal against the former at 1 : 80,000. There appears to be little correlation between size of inoculum and effective dilution of penotrane.

INNES, J. R. M., SEIBOLD, H. R. & ARENTZEN, W. P. (1952). **The pathology of bovine mastitis caused by** *Cryptococcus neoformans.*— *Amer. J. vet. Res.* **13,** 469-475. [Abst. from authors' summary.] 596

The lesions were distinctive from those of the common types of bacterial bovine mastitis. The process consisted primarily of dissolution of the epithelium of the acini, ductules and ducts caused by massive growth of the organisms in the lumina, followed by a diffuse histiocytic, or by a frankly granulomatous, reaction in the more chronic stages. The regional supramammary lymph nodes were commonly involved. One cow had foci of cryptococcal infection in the lungs.

BEARE, J. M. & CHEESEMAN, E. A. (1951). **Tinea capitis: review of 1004 cases.**—*Brit. J. Derm.* **63,** 165-186. [Abst. from abst. in *Rev. med. vet. Mycol.* **1,** 509.] 597

The clinical appearances of the ringworm caused by *M. audouini, M. canis, Trichophyton discoides, T. mentagrophytes, T. equinum,* and *T. schoenleini* (favus) were described with particular reference to the differential diagnosis between *M. audouini* and *M. canis* infection and to the inital site of infection by the former species.

WILSON, J. W. (1951). **New ultraviolet generator for use in the diagnosis of tinea capitis by fluorescence.** — *Arch. Derm. Syph., Chicago.* **63,** 771-772. [Abst. from abst. in *Rev. med. vet. Mycol.* **1,** 506. (1951).] 598

Mineralight SL3660 as a source of U.V. radiation gave good results.

KLIGMAN, A. M. (1951). **Application of potassium hydroxide to the skin as an aid in the direct examination of scales for fungi.**— *Arch. Derm. Syph., Chicago.* **63,** 252. [Abst. in *Rev. med. vet. Mycol.* **1,** 505 (1951) modified.] 599

K. described application of a 10% potassium hydroxide solution to the skin as an adjunct to the direct microscopic examination of scrapings from ringworm lesions for hyphal elements.

TINSLEY, M. & FROMAN, A. (1950). **Actinomycotic brain abscess.**—*Illinois med. J.* **98,** 303-306. [Abst. from abst. in *Rev. med. vet. Mycol.* **1,** 485 (1951).] 600

An account of the isolation of *Actinomyces bovis* from the brain of a human patient.

CONCEIÇÃO, J. M. (1949). A acção do Laboratório Central de Patologia Veterinária na profilaxia da peripneumonia contagiosa dos bovinos em Angola. **[Immunization against bovine contagious pleuro-pneumonia.]**— *Pecuária.* **1,** pp. 197-203. 601

Bovine contagious pleuro-pneumonia is prevalent in Angola. Vaccines cannot be imported from other countries: they have been found to have lost potency in transit. The Central Veterinary Laboratory prepares a vaccine using

local strains, isolated from the lymph by the method described by Ebert and Peretz. It is well tolerated and has good immunizing power.

The best method of control is slaughter outright of clinically affected cattle, slaughter under abattoir control of serological reactors and immunization every ten months of all the cattle.

—F. A. Esteves.

Morton, H. E., Smith, P. F. & Keller, R. (1952). **Prevalence of pleuropneumonia-like organisms and the evaluation of media and methods for their isolation from clinical material.**—*Amer. J. publ. Hlth.* 42, 913-925. 602

The authors reviewed the widespread prevalence of pleuropneumonia-like organisms (PPLO) in inflammation of the urino-genital tract, joints, lungs, eyes or nasopharynx in animals and in man and in these tissues when not diseased, and discussed their communicability.

Of 189 specimens from human clinical cases, 28·6% were positive for PPLO.—A. Ackroyd.

Keller, R., Smith, P. F. & Morton, H. E. (1952). **Susceptibility of pleuropneumonia-like organisms from the human genital tract to the action of soaps.**—*J. gen. Microbiol.* 7, 313-319. [Abst. from authors' summary.] 603

Pleuropneumonia-like organisms of human origin were very susceptible to the deleterious action of soaps. There was no significant difference in the antibacterial action of soaps containing 2% hexachlorophene and an ordinary hand soap.

Alexander, F., Macpherson, M. J. D. & Oxford, A. E. (1952). **Fermentative activities of some members of the normal coccal flora of the horse's large intestine.**—*J. comp. Path.* 62, 252-259. [Abst. from authors' summary.] 604

Streptococci capable of fermenting lactose and starch were isolated from the large colon contents of fistulated ponies. They formed a capsule demonstrable by the capsular swelling reaction described by Neufeld. They could be differentiated serologically from other types of streptococci. *Veillonella gazogenes* was also present in the colon.

Lamanna, C. (1952). **Symposium on the biology of bacterial spores. I. Biological role of spores.**—*Bact. Rev.* 16, 90-93. 605

Knaysi, G. (1952). **Symposium on the biology of bacterial spores. II. The cytology of sporulation.**—*Ibid.* 93-101. 606

Wynne, E. S. (1952). **Symposium on the biology of bacterial spores. III. Some physiological aspects of bacterial spore formation and spore germination.**—*Ibid.* 101-110. 607

Schmidt, C. F. (1952). **Symposium on the biology of bacterial spores. IV. The effect of "culture history" upon spore formation on a standard test medium.**—*Ibid.* 110. [Only abst. given. Abst. from abst.] 608

Curran, H. R. (1952). **Symposium on the biology of bacterial spores. V. Resistance in bacterial spores.**—*Ibid.* 111-117. 609

Levine, M. (1952). **Symposium on the biology of bacterial spores. VI. Spores as reagents for studies on chemical disinfection.**—*Ibid.* 117-125. 610

Sugiyama, H. (1952). **Symposium on the biology of bacterial spores. VII. Effect of fatty acids on the heat resistance of Clostridium botulinum spores.**—*Ibid.* 125-126. [Only abst. given. Abst. from abst.] 611

I. L. examined and rejected those theories which regard endospores as being formed in response to harmful environmental conditions, as taking part in a sexual process, or as being adapted to aerial distribution. He concluded that the role of endospores is unknown.

II. K. studied endospore formation on living bacteria—using the phase contrast microscope, and on colonies stained by a new technique. He described in detail the results, which were almost identical. He discussed the problem of sexuality of endospores.

III. W. discussed factors favouring or inhibiting sporulation with reference to the concept that sporulation occurs within narrower environmental limits than does vegetative growth. He discussed quantitative methods for the study of spore germination. He considered the processes of germination to be fundamentally different from those of vegetative growth.

IV. The culturing of an organism on various media may affect its subsequent sporulation on nutrient agar. S. discussed this finding.

V. C. discussed the effect of various factors operating in the environment in which the spores are formed, stored, exposed to the test conditions, and finally examined for viability. Emphasis was laid mainly on resistance to heat. He discussed the physical and chemical basis of resistance.

VI. Spores are superior to vegetative cells in a number of ways as test reagents in the study of chemical germicides. L. reported observations on the disinfection of spores by alkalis, hypochlorites and chloramines under various

conditions of concentration, reaction (pH) and temperature.

VII. S. discussed the possible mechanisms by which spores grown in media containing various fatty acids tend to show an increased resistance to heat.—E. A. GIBSON.

See also absts. **776** (breaking-up and extraction of bacteria); **777** (selective dye for Gram negative bacteria); **778** (differentiation of saprophytic from virulent mycobacteria); **780** (maintenance of fungus cultures); **781** (study of fungal infections); **790** (report, U.S.A.).

DISEASES CAUSED BY PROTOZOAN PARASITES

SWARTZWELDER, J. C. & AVANT, W. H. (1952). **Immunity to amebic infection in dogs.**—*Amer. J. trop. Med. Hyg.* **1**, 567-575. **612**

Amoebiasis could be induced in 39 of 46 dogs when inoculated *per anum* with trophozites of 2 strains of *E. histolytica*. Re-infection after proved spontaneous cure of the initial infection could only be established in 7 of the 39 dogs. The duration of immunity ranged from 10–38 weeks.—A. ACKROYD.

FIENNES, R. N. T-W- (1952). **Pigment in trypanosomiasis of cattle.** [Correspondence.]—*Trans. R. Soc. trop. Med. Hyg.* **46**, 462-463. **613**

Dark brown granules were seen in lymph nodes and kidney in chronic infections with *T. congolense* and *T. vivax*. They gave positive tests for iron, but their origin was not determined.—JAS. G. O'SULLIVAN.

BARTHA, A. (1951). Beitrag zur Biologie von Trichomonas fetus. [**The biology of *Trichomonas foetus*.**]—*Acta vet. hung.* **1**, 35-44. [In German. Russian summary.] **614**

Counts of living and dead trichomonads cultivated on serum broth with and without calcium carbonate revealed that growth reached its maximum 3–6 days after inoculation and was maintained for 2–4 days at about pH 7.0.

—M. L. CLARKE.

FLORENT, A. & GRUSLIN, G. (1952). Du diagnostic de la trichomoniase du bétail. Prélèvements à faire et leur conditionnement pour l'envoi au laboratoire. [**Collection of specimens for laboratory diagnosis of bovine trichomoniasis.**]—*Ann. Méd. vét.* **96**, 191-198. **615**

The authors gave details of the technique for the diagnosis of *T. foetus* infection in cows and bulls, with emphasis on the collection of specimens.—J.D.

CABALLERO DÍAZ, A. (1951). Estudio de la infección típica por *T. foetus* en becerras vírgenes y conclusiones fundamentales para el diagnóstico de la enfermedad. [*Trichomonas foetus* **infection in virgin heifers.**]—*An. Fac. Vet., Madrid.* **3**, 307-321. [English, French and German summaries.] **616**

A general discussion on trichomoniasis in virgin heifers with particular reference to diagnosis. No new knowledge.—I. W. JENNINGS.

HEISCH, R. B. (1952). **New piroplasms of a genet cat and a ground-squirrel from Kenya.**—*Ann. trop. Med. Parasit.* **46**, 150-154. [Author's summary copied *verbatim*.] **617**

Two new piroplasms are described from a genet cat (*Genetta genetta neumanni*) and one from a ground-squirrel (*Euxerus erythropus fulvior*).

SCHMIDT, H. & FRANKLIN, T. E. (1951). **Experimental bovine anaplasmosis and its treatment with trifloryl.**—*Proc. 55th Ann. Meet. U.S. live Stk sanit. Ass.* 260-270. **618**

Trifloryl (4-(4-diethylamino-1-methylbutylamino)-7-trifluoromethylquinoline) was of no value in the treatment of experimental anaplasmosis (*A. marginale*) in Jersey cattle.

—E. G. WHITE.

HART, E. W., PAULLEY, J. W., RIVERS, J. S. & WESTLAKE, E. K. (1951). **Toxoplasmosis**—*J. trop. Med.* (*Hyg.*) **54**, 226-231. **619**

A discussion on the pathology, clinical diagnosis and treatment of congenital and acquired toxoplasmosis in human beings.—E.G.

BAUER, F. (1952). Die Toxoplasmose des Hundes und die Bedeutung der Komplementbindungsreaktion nach Westphal bei ihrer Diagnosestellung. [**Diagnosis of *Toxoplasma* infection in dogs using the complement-fixation test described by Westphal.**]—*Tierärztl. Umsch.* **7**, 265-267. **620**

Positive reactions to the Westphal complement-fixation test were obtained in 6 dogs and 4 bitches (mostly chronic cases), up to 90 days after oral infection with mouse toxoplasms.

—M. L. CLARKE.

See also absts. **782** (method for obtaining trypanosomes in large numbers); **788** (report, U.S.A.).

DISEASES CAUSED BY VIRUSES AND RICKETTSIA

WEIMERSHAUS, W. (1951). Ein Beitrag zum heutigen Stand der Tollwutgefahr. [**The danger of rabies under present conditions.**] —*Med. Mschr.* **5**, 86-88. **621**

Since the second world war the incidence of rabies in Germany, especially in the eastern zones, has increased. The mortality in persons promptly inoculated is 0·6%.—W. R. BETT.

NIKOLIĆ, M. (1951). Kritische Studie zu den Vorschlägen des Ständigen Komitees für Tollwut bei der Welt-Gesundheits-Organisation. [**A critical study of the proposals of the rabies committee of WHO.**]—*Vet. Arhiv.* **21**, 1-35. [In German. Croatian summary.] **622**

The proposals are most critically examined in detail by the Director of the Yugoslav State Pasteur Institute.—S. E. FOX.

FAZEKAS DE ST. GROTH, S., ISAACS, A. & EDNEY, M. (1952). **Multiplication of influenza virus under conditions of interference.** [Correspondence.] — *Nature, Lond.* **170**, 573. **623**

The authors described certain peculiarities of the growth curves of active influenza virus, as they show possible pitfalls in planning and interpreting interference experiments.

—W. R. BETT.

TAMM, I., FOLKERS, K. & HORSFALL, F. L., JR. (1952). **Inhibition of influenza virus multiplication by 2,5-dimethylbenzimidazole.** —*Yale J. Biol. Med.* **24**, 559-567. [Authors' summary copied *verbatim*.] **624**

2,5-Dimethylbenzimidazole inhibits the multiplication of influenza B virus (Lee strain) or influenza A virus (PR8 strain) in the chorioallantoic membrane *in vitro*. The compound is inhibitory when given one hour after inoculation of a large amount of virus. It does not inactivate, nor does it interfere with, adsorption of the virus by the membrane. In concentrations which inhibit Lee or PR8 virus multiplication, the compound does not decrease O_2 consumption of the membrane. Prolonged exposure of the membrane to the compound does not diminish the capacity of the membrane to support Lee virus multiplication.

FASTIER, L. B. (1952). **A comparison between the PR8 influenza virus receptor areas on fowl and on sheep erythrocytes.**—*J. Bact.* **64**, 547-555. [Author's summary copied *verbatim*.] **625**

Hemagglutination of sheep erythrocytes by the PR8 strain of influenza virus proceeds through receptor areas quantitatively similar to those on avian red cells. While no differences could be detected in either the rate or the amount of hemagglutination bound by both cell types, spontaneous elution from sheep cells occurred at a lower temperature. This process was prevented by the presence of calcium ions and also by adjusting the pH of the mixture to less than 6·2.

LOVELOCK, J. E., PORTERFIELD, J. S., RODEN, A. T., SOMMERVILLE, T. & ANDREWES, C. H. (1952). **Further studies on the natural transmission of the common cold.**—*Lancet.* **263**, 657-660. [Authors' conclusions modified.] **626**

Though common-cold infection may spread from person to person by normal social contact, and through the air in the form of droplet nuclei, the rate of clinical cross-infection is low. The authors found no evidence suggesting that spread by indirect contact is of major importance in the natural transmission of the common cold. Results obtained suggest that the virus of the common cold may be sensitive to drying.

DEAN, D. J. (1952). **The response of certain domesticated animals to injections of Coxsackie, MM, and Theiler viruses.**—*Ann. Rep. Div. Lab. Res., N.Y. St. Dep. Hlth.*, 1951. pp. 10. **627**

Calves, sheep, pigs, dogs and cats showed slight febrile reactions only, after intracerebral and i/p injection of these viruses. Protective antibodies developed in the serum following inj. of MM and Coxsackie viruses. Sera from animals injected with Theiler virus have not yet been examined.—IAN DAVIDSON.

KOMAROV, A. & HAIG, D. A. (1952). **Identification of a strain of bluetongue virus isolated in Israel.**—*J. S. Afr. vet. med. Ass.* **23**, 153-156. [Authors' summary copied *verbatim*.] **628**

A virus isolated from sheep in Israel was compared with known strains of bluetongue. Its behaviour in eggs, its particle size and the degree of immunity which this strain conferred on sheep against two South African and a Cyprus strain of bluetongue, indicated that this was a strain of bluetongue.

BROCK, W. E., PEARSON, C. C. & KLIEWER, I. O. (1951). **Studies on the pathology of virus anemia or ictero-anemia of swine.**—*Proc. 88th Ann. Meet. Amer. vet. med. Ass.* Milwaukee. Aug. 20-23, 1951. pp. 160-164. **629**

In a series of 9 splenectomized pigs affected with the disease coccoid, ring- and rod-shaped

bodies were seen on the r.b.c. as described by Splitter [*V.B.* **21**, 1997]. Gross and microscopic changes in other tissues were non-specific and indicative of deficient oxygenation.

The authors confirmed the claim of Foote *et al.* [*V.B.* **21**, 2905] to have transmitted the disease by the inoculation of a cell-free filtrate of serum from an affected pig.—J. T. Done.

Antonov, M. I. & Vaviluichev, Y. V. (1952). **[Treatment of distemper in dogs with garlic.]** —*Veterinariya, Moscow.* **29**, No. 6. pp. 41-42. 630

A note on the i/v injection of the juice of garlic into 13 dogs, 12 of which recovered. All the nine controls died. Details of treatment were given.—F.A.A.

Cabasso, V. J. (1952). **Canine distemper and "hard pad" disease. An experimental study of the etiological agent of "hard pad" disease and its immunologic relationship to canine distemper virus, as determined on the ferret and in the chick embryo.**—*Vet. Med.* **47**, 417-423. 631

Distemper virus and antiserum, virus from a case of demyelinating encephalitis and "hard pad" disease antiserum were used in cross-neutralization tests in eggs, and neutralization and cross-immunization tests in ferrets. A close immunological relationship between the two viruses was shown.

Distemper-immune ferrets were not susceptible to infective material from six field cases of "hard pad" disease.—Ian Davidson.

Hadek, R. (1952). **Lepine and Sautter's disease** [of g. pigs] **in Great Britain.** [Correspondence.]—*Nature, Lond.* **170**, 165. 632

This clinically symptomless virus disease which can be detected only by the finding of microscopic lung hepatisation, is now widespread in g. pigs in Britain and warrants further investigation.—A. Ackroyd.

Beaudette, F. R. (1951). **Current literature on Newcastle disease.**—*Proc. 55th Ann. Meet. U.S. live Stk sanit. Ass.* 108-174. 633

This is an important review of the current literature on Newcastle disease, and covers 309 references.

Walker, R. V. L. (1952). **Studies in Newcastle disease. IV. Rapid methods of diagnosis.**—*Canad. J. comp. Med.* **16**, 333-337. 634

Plate haemagglutination and haemagglutination-inhibition tests with live virus have proved useful in the lab. A whole-blood test with formalin-inactivated antigen compared favourably with the live virus test for the detection of N.D. antibodies.—R. Gwatkin.

Monti, G. (1952). La diagnosi postmortale della pseudopeste aviare mediante la reazione di Hirst. **[The haemagglutination test in the *post-mortem* diagnosis of Newcastle disease.]** —*Arch. vet. Ital.* **3**, 215-226. [English, French, German and Spanish summaries. Abst. from English summary.] 635

M. confirmed the value of the haemagglutination test using liver and spleen extracts for P.M. diagnosis of Newcastle disease.—D. Luke.

Auer, J. (1952). **Functional localization of lesions in Newcastle disease. I. General survey.**—*Canad. J. comp. Med.* **16**, 277-284. 636

The principal changes were general invasion of lymphocytes, lymphocytic infiltration, vascular engorgement, perivascular cuffing and neuronal degeneration. Forced movements are probably caused by cerebellar lesions; changes close to the midline in the hind and midbrain are responsible for head deviation; and excitability or somnolence may be referable to changes in the hypothalamus.—R. Gwatkin.

Zuydam, D. M. (1952). **Isolation of Newcastle disease virus from the osprey and the parakeet.**—*J. Amer. vet. med. Ass.* **120**, 88-89. 637

N.D.V. was isolated from an osprey picked up by a ship from an oil patch in the Atlantic Ocean and transferred to the Rotterdam Zoo where it died 6 weeks later. N.D.V. was also recovered from a consignment of parakeets imported into Holland from India.—D. Luke.

Reagan, R. L., Day, W. C., Harmon, M. P. & Brueckner, A. L. (1952). **Studies of Newcastle disease virus in the dog-faced baboon** (*Papio porcarius*).—*Cornell Vet.* **42**, 366-367. [Authors' summary modified.] 638

Dog-faced baboons were not susceptible to the California and Minnesota strains of Newcastle disease virus by intracerebral and intradermal inoculation. One baboon became sick, probably from bacterial infection. The brain material from this baboon was treated with penicillin and streptomycin. When it was injected into 10-day embryonated hen eggs, Newcastle disease virus was not demonstrated.

Cordier, G., Harouni, B. & Ounais, A. (1951). Étude de l'adsorption du virus de Newcastle par les hématies. **[Adsorption of Newcastle disease virus on erythrocytes.]**—*Ann. Inst. Pasteur.* **80**, 409-416. 639

Using the haemagglutination reaction, the

authors demonstrated the adsorption of N.D.V. on erythrocytes from fowls, human beings, cattle and five other species.—J.D.

Reagan, R. L. & Brueckner, A. L. (1952). **Electron microscope studies of four strains of infectious bronchitis virus.**—*Amer. J. vet. Res.* **13,** 417-418. [Authors' summary copied *verbatim.*] 640

Electron micrographs of four avian infectious bronchitis strains are presented. There is some difference in the strains in regard to shape and density of the virus particles, but not in regard to size. Two strains show short prolongations.

Van Roekel, H., Olesiuk, O. M. & Peck, H. A. (1952). **Chronic respiratory disease of chickens**—*Amer. J. vet. Res.* **13,** 252-259. 641

The authors gave a brief history of the disease in the U.S.A. The virus was isolated from 53 natural outbreaks and its effect studied on the developing chick embryo, and after inoculation into chicks and turkey poults. The diagnostic value of chick embryo and bird inoculation in this disease was shown.

Antibiotics were found to be of little protective value, and mice were refractory to the disease which, it appears, may be transmitted naturally *via* the egg.—F. T. W. Jordan.

Ellenbogen, B. K. & Miller, C. M. (1952). **Psittacosis in a family** [infection from pigeons.]—*Brit. med. J.* July 26th, 189-190. [Authors' summary copied *verbatim.*] 642

Psittacosis of a milder type is reported as occurring in a father and son, the disease being contracted from contact with presumed infected domestic pigeons. Absence of respiratory symptoms was an unusual feature. Chloramphenicol administered to one of the patients appeared to have an immediate beneficial effect. It is re-emphasized that in the diagnosis of virus pneumonia it is important to inquire whether there has been contact with birds other than those of the psittacine group.

Campbell, R. E. & Pruitt, F. W. (1952). **Vitamin B_{12} in the treatment of viral hepatitis. A preliminary report.**—*Amer. J. med. Sci.* **224,** 252-262. 643

Experimentally, vitamin B_{12} has lipotropic activity and plays a role in liver repair. Clinically, in viral hepatitis in man, it produces more rapid return to normal appetite and liver size.—W. R. Bett.

Ferris, D. H. & Hanson, R. P. (1952). **A technique employing embryonating egg to test virus-transmitting ability of certain insect vectors.**—*Cornell Vet.* **42,** 389-394. [Authors' summary slightly modified.] 644

The technique described for feeding insects on embryonated eggs provides a practical and inexpensive method to screen insects according to their ability to ingest virus, to determine whether the virus can persist in the insect in an infectious state for various intervals of time, and finally to ascertain whether the virus is transmissible from the insect to a susceptible host.

Schlesinger, R. W. (1952). **Immunological barriers to viral growth.**—*Ann. N.Y. Acad. Sci.* **54,** 953-959. 645

S. reviewed current knowledge on the relationships between neutralizing antibodies, the host cell and viral growth, with particular reference to bacteriophages and the viruses of influenza, poliomyelitis and equine encephalomyelitis.—Ian Davidson.

IMMUNITY

Docton, F. L., Ferguson, L. C., Lazear, E. J. & Ely, F. (1952). **The antigenicity of bovine spermatozoa.**—*J. Dairy Sci.* **35,** 706-709. [Authors' summary copied *verbatim.*] 646

Iso-immune serum, containing antibodies for bovine erythrocytes, also reacted specifically with bovine spermatozoa. Antibodies produced in sheep against bovine spermatozoa caused agglutination of bovine spermatozoa and also produced specific lysis of erythrocytes of certain cattle. This evidence supports the theory that the antigens previously recognized in bovine erythrocytes have similar or identical counterparts in the spermatozoa.

Eyquem, A. & Podliachouk, L. (1952). Les groupes sanguins des équidés. I.—Les groupes sanguins des mulets. **[Blood groups of mules.]**—*Ann. Inst. Pasteur.* **83,** 57-61. 647

The blood groups of 65 mules were determined using sera from mules and donkeys, and classified on the basis of four principal antigens which the authors call A, B, C and D. Each of these antigens may be present singly in the red cells or none may be present; other combinations met with were AB, AC, AD, ABC and ABD. The agglutinins, usually naturally-occurring, were sometimes pure and sometimes mixed; no pure anti-B was found.

—G. Fulton Roberts.

BRION, A. (1949). Sur le mécanisme de l'immunisation de la jument mulassière par son produit, et le passage des anticorps anti-mulet chez son muleton. [**Mechanism of iso-immunisation of mule-breeding mares.**]—*C. R. Acad. Sci., Paris.* **228.** 1614-1616. **648**

On the subject of icterus neonatorum in the offspring of mule-breeding mares, B. postulated that (a) the mare is immunised only if it absorbs mule red blood corpuscles into its circulation through a damaged placenta; (b) antibodies to mule r.b.c. may be passed to the foetus *via* the placenta before birth, or more generally *via* the colostrum, at a time when the intestine is still very permeable to proteins. In the latter case the danger of jaundice occurring is past when the antibody titre is lowered in the milk and the intestinal mucosa of the mule-foal has lost its initial permeability, that is, in 2–5 days at the most. Prevention consists in withholding the mare's milk over this period.

—I. W. JENNINGS.

GROOTENHUIS, G. (1952). Iso-immunisatie tijdens de graviditeit van het paard. [**Iso-immunisation of pregnancy in mares.**]—*Tijdschr. Diergeneesk.* **77,** 291-296. [English summary.] **649**

Two new-born cart-horse foals died of jaundice and anaemia. Serological reactions of the dams were slight or doubtful but in one case antibodies (complete 1:16, incomplete 1:128) were stimulated by a single injection of the sire's blood.—C. A. VAN DORSSEN.

WIRTH, D. (1952). Die hämolytische Krankheit der neugeborenen Fohlen. [**Haemolytic disease of new-born foals.**] — *Tierärztl. Umsch.* **7,** 297-301. **650**

A comparative theoretical discussion on haemolytic disease of new-born foals.

—H. BEHRENS.

See also abstr. **567** (evaluation of allergens); **573** (saponin vaccine against bovine pasteurellosis); **594** (toxoid-aluminium hydroxide vaccine against tetanus); **601** (bovine contagious pleuro-pneumonia); **631** (distemper and "hard pad" disease); **634-635** (Newcastle disease); **645** (immunological barriers to viral growth).

PARASITES IN RELATION TO DISEASE [GENERAL]

KOUTZ, F. R. (1952). **The problem of poultry parasites in deep and built-up litter.**—*Speculum.* **5,** No. 3. pp. 18-21, 46, 49 & 51. **651**

Five groups of 30 day-old New Hampshire chicks were reared on varying types of built-up litter. Oöcysts of coccidia and parasitic ova remained viable and most were found when chicks used litter previously used for hens. Resting the litter for 10 weeks in winter reduced the parasitic concentration.

—JAS. G. O'SULLIVAN.

PARASITES IN RELATION TO DISEASE [HELMINTHS]

D'SOUZA, B. A. (1949). **Observations on the outbreak of the so-called obscure sheep disease at the Livestock Research Station, Hosur, in 1946-47.**—*Indian vet. J.* **25,** 321-330. **652**

The cause of a heavy loss in sheep was found to be immature paramphistomes, *Cotylophoron cotylophorum* and *Gastrothylax crumenifer*. Carbon tetrachlorethylene medication with proper management of the sheep and pasture had encouraging results.—K. C. SINHA.

SPEDDING, C. R. W. (1952). **The effect of a sub-clinical worm-burden on the live-weight gain of sheep at pasture.**—*Emp. J. exp. Agric.* **20,** 209-219. [Abst. from author's summary.] **653**

Even at low levels of infestation, a negative correlation existed between size of worm-burden and live-weight gain of sheep. This correlation may be obscured by environmental influences, including birth factors.

GOLDBERG, A. (1952). **Effects of the nematode *Oesophagostomum venulosum* on sheep and goats.**—*J. Parasit.* **38,** 35-47. **654**

It was corroborated that *O. venulosum* was not nearly so pathogenic for sheep as is *O. columbianum* or *O. radiatum* to cattle. There was no permanent serious effect on the intestine and nodules were rare. The larvae returned to the lumen within one day of entering the mucosa, too short a time to induce a serious local reaction.

The optimal number of larvae for inoculation was 350–1,500 in one dose; the prepatent period was approx. one month and the longest patent period approx. 400 days. Older animals appeared to be slightly more resistant than young animals, and fewer worms became estab-

lished in re-infections. The greater the number of larvae given in the first infection and the more extended the period of administration the greater was the resistance to re-infection after the termination of the initial infection.

—Jas. G. O'Sullivan.

Gerichter, C. B. (1951). **Studies on the lung nematodes of sheep and goats in the Levant.** —*Parasitology*. **41,** 166-183. [Abst. from author's summary.] **655**

Dictyocaulus filaria, Cystocaulus ocreatus, Muellerius capillaris, Protostrongylus rufescens and *Neostrongylus linearis* were found in sheep and goats in the Levant, *C. ocreatus* being the commonest; while *N. linearis* was very rare. G. demonstrated the presence of a small but well-developed bursa of a protostrongylid type in *M. capillaris*. He studied the life histories of *C. ocreatus, M. capillaris* and *P. rufescens* and determined the susceptibility of various snail hosts. Experimental infections with larvae of *C. ocreatus* and *M. capillaris* were induced in 11 species of terrestrial snails and slugs (belonging to 7 genera). Only 3 of these species proved susceptible to infection with larvae of *P. rufescens*. Experimental infections of definitive hosts with these three species were obtained. Natural infection of *Helicella barbesiana* with the larvae of *C. ocreatus, M. capillaris* and *P. rufescens* was found in the vicinity of Jerusalem.

See also abst. **788** (report, U.S.A.).

SPONTANEOUS AND TRANSMISSIBLE NEOPLASMS AND LEUCAEMIAS [INCLUDING FOWL PARALYSIS]

Levy, G. (1952). **Carcinoma of the stomach of a dog with metastases.**—*J. Amer. vet. med. Ass.* **121,** 263-266. [Abst. from author's summary.] **656**

An account of a case of carcinoma of the stomach in a dog with metastases to the heart, lungs, spleen, and kidneys.

Rogers, S. (1952). **Serial transplantation of rabbit papillomas caused by the Shope virus.** —*J. exp. Med.* **95,** 543-554. [Author's summary modified.] **657**

Two cutaneous papillomas produced with the Shope virus in adult domestic rabbits were transferred to their leg muscles and thence to those of several successive groups of rabbits of various ages. The growths failed to establish themselves in some newborn animals, but in many formed huge masses and caused death.

When growing actively the papillomas sometimes penetrated the reactive tissue encapsulating them and replaced the adjacent muscle. They often entered lymph and blood vessels but never metastasized, nor did they undergo carcinomatous change though their total period of proliferation was as considerable as that elapsing in many instances before cancer appeared in papillomas produced by the same virus material and left on the skin.

Legon, C. D. (1952). **The aetiological significance of geographical variations in cancer mortality.**—*Brit. med. J.* Sept. 27th, 700-702. [Author's summary copied *verbatim*.] **658**

It is suggested that the major geographical variations in cancer mortality in England and Wales are associated with variations in the organic content of cultivated soils, and may be conditioned by micronutrient deficiencies in food plants grown on soils of high organic content; and that populations whose diets include vegetable foods grown on such soils may be subjected to the action of carcinogens, or may be deprived of protective substances.

See also abst. **788** (report, U.S.A.).

NUTRITIONAL AND METABOLIC DISORDERS

Winchester, C. F. (1952). **Monozygotic twin beef cattle in nutrition research.**—*Science.* **116, 3.** **659**

One member each of 6 pairs of identical twin beef cattle were fed on a maintenance level ration from the age of 6 months to one year. They were then given full rations and were able to make weight gains as rapidly and as economically as their twin brothers fed adequate rations throughout the experiment.

—A. Ackroyd.

Siedler, A. J. & Schweigert, B. S. (1952). **Effect of the level of fat in the diet on the growth performance of dogs.**—*J. Nutr.* **48,** 81-90. **660**

Weight gains over a 10-week period in young puppies fed either a basal dry diet with 4, 6 or 8% fat added or a commercial meal with 6% fat added were equal or slightly superior to gains on diets without added fat. The calories from the fat were well utilized. When the added fat was replaced by sucrose, weight gains were comparable to those on the basal diet.—F.E.W.

OPPENHEIM, E. & BRUGER, M. (1952). **Experimental cholesterol atherosclerosis. XI. Studies with vitamin A.**—*Arch. Path.* **53,** 520-522. [Authors' conclusions slightly modified.] **661**

Vitamin A administered orally did not affect the cholesterol content of the blood or that of the aorta in normal rabbits nor modify the increased cholesterol content of the blood and the aorta in cholesterol-fed rabbits. The decrease of the ratio of serum phospholipids to total cholesterol in rabbits fed cholesterol was not altered by the simultaneous addition of vitamin A.

MCLEAN, J. R. & BEVERIDGE, J. M. R. (1952). **Hepatic necrosis induced by dietary means. VI. The effect of varying the level and nature of protein and the level of fat on the development of liver necrosis.**—*J. Nutr.* **47,** 41-55. **662**

When the protein of a necrogenic diet was supplied as up to 20% of yeast, the incidence of necrosis was high. Protein supplied as casein did not cause necrosis. High fat levels favoured necrosis.—R. MARSHALL.

BLAXTER, K. L. (1952). **The utilization of the minerals, vitamins and other constituents of grass.**—*Brit. J. Nutr.* **6,** 110-117. **663**

B. listed the requirements of various animal species for calcium, phosphorus and other minerals and for vitamins and gave figures for the content of these materials in a variety of pastures. Utilization of major dietary constituents may be greatly limited by mineral deficiencies, but is little affected by deficiencies of vitamins.
—R. MARSHALL.

MARSTON, H. R. & LEE, H. J. (1952). **Cobalt in the nutrition of ruminants. Response of cobalt-deficient sheep to massive doses of vitamin B_{12}.**—*Nature, Lond.* **170,** 791. **664**

The deficiency syndrome in sheep grazed on cobalt deficient pasture was found to be the result of vitamin B_{12} deficiency. It may be cured by giving massive doses of vitamin B_{12} parenterally.—G. B. S. HEATH.

MARSTON, H. R. & SMITH, R. M. (1952). **Control of cobalt-deficiency in sheep by injection of vitamin B_{12}.** — *Nature, Lond.* **170,** 792-793. **665**

Massive doses of vitamin B_{12} given parenterally prevented development of cobalt-deficiency symptoms, and cured sheep which had developed symptoms. The authors concluded that the role of cobalt is to stimulate the proliferation in the rumen of those micro-organisms which produce vitamin B_{12}.
—G. B. S. HEATH.

DAWBARN, M. C., HINE, D. C. & HUGHES, P. (1952). **Influence of cobalt on the production of factors possessing vitamin B_{12}-like activity in the faeces of sheep.**—*Nature, Lond.* **170,** 793. **666**

Administration to sheep of 1 mg. cobalt per day *per os* produced an increase in the vitamin B_{12}-like substance contained in the faeces.—G. B. S. HEATH.

ANDREWS, E. D. (1952). **Response to vitamin B_{12} of grazing cobalt-deficient lambs.** [Correspondence.]—*Nature, Lond.* **170,** 807. **667**

Administration of vitamin B_{12} to lambs grazing cobalt deficient pastures was at least as efficient in promoting increase in weight as was dosing the lambs with cobalt.—G. B. S. HEATH.

WALSH, T., NEENAN, M. & O'MOORE, L. B. (1952). **Molybdenum in relation to cropping and livestock problems under Irish conditions.**—*Nature, Lond.* **170,** 149-150. **668**

Retarded growth of plants was caused by deficiency of molybdenum in soils; calcium increased the availability of molybdenum and copper decreased it. Symptoms of excess molybdenum uptake in cattle were associated with high Ca/P ratio and were typical of those of copper deficiency. Limited molybdenum uptake was associated with acidity of the soil and excess uptake with alkaline soil.—R. MARSHALL.

KRATZER, F. H. (1952). **Effect of dietary molybdenum upon chicks and poults.**—*Proc. Soc. exp. Biol., N.Y.* **80,** 483-486. [Author's summary copied *verbatim*.] **669**

Growth of chicks and poults was depressed by approximately 25% by the addition of 300 p.p.m. molybdenum to their rations. The addition of copper to the rations containing molybdenum caused slightly improved growth. There was no evidence of anemia or diarrhea in birds on the high molybdenum diets. Poults fed high molybdenum rations for over 4 weeks had normal feather pigmentation.

MELLANDER, O. & ISAKSSON, B. (1950). **The physiological importance of the casein phosphopeptide calcium salts. I. Intravenous and peroral calcium dosage in animal experiments.**—*Acta Soc. med. Upsalens.* **55,** 239-246. [In English.] 670

MELLANDER, O. (1950). **The physiological importance of the casein phosphopeptide calcium salts. II. Peroral calcium dosage of infants. Some aspects of the pathogenesis of rickets.**—*Ibid.* **55,** 247-257. [In English.] 671

I. Easily soluble calcium salts of enzyme-resistant phosphopeptides (obtained by digestion of casein) were given intravenously to rabbits. In young animals the blood calcium level rapidly returned to normal, in the others more slowly, no substantial amounts being secreted in urine and faeces. Given by mouth the salts counteracted the development of rickets.

II. Calcium bound to phosphopeptides was resorbed from the digestive tract by infants and was shown to promote calcification in some cases without concurrent administration of vitamin D.—A. J. ULTÉE, JR.

KAYAHAN, S. (1952). **The effect of high doses of ascorbic acid on the functions of the adrenal glands.**—*J. Endocrin.* **8,** 211-213. [Author's summary modified.] 672

Oral administration of 4 g. ascorbic acid daily for 4 days to 11 human beings increased the urinary excretion of 11-oxysteroids and decreased the excretion of 17-ketosteroids. Ascorbic acid probably acts directly on the adrenal cortex.

CHANDA, R., CLAPHAM, H. M., MCNAUGHT, M. L. & OWEN, E. C. (1951). **The digestibility of carotene by the cow and the goat as affected by thyroxine and thiouracil.**—*Biochem. J.* **50,** 95-99. 673

The digestibility of carotene by lactating cows and goats was increased by injections of thyroxin and reduced by inj. of thiouracil.
—R. MARSHALL.

GERRING, J. C. (1952). **Sleepy sickness and milk fever in ewes.**—*N.Z. J. Agric.* **85,** 115 & 117-118. 674

A conventional review article on pregnancy toxaemia and hypocalcaemia in ewes. Contains no new information.—G. B. S. HEATH.

GRIFFITHS, W. R. (1952). **Treatment of pregnancy toxaemia in ewes by oral administration of glycerol.**—*Vet. Rec.* **64,** 734-735. [Abst. from author's summary.] 675

In one flock 11 out of 12 cases and in the other three cases out of four recovered after treatment with 4 oz. of diluted glycerol.

POTTER, B. J. (1952). **Relief of hypoglycaemic convulsions with butyric acid.** [Correspondence.]—*Nature, Lond.* **170,** 541. 676

Experiments with ewes, lambs and rabbits show that injections of sodium butyrate intravenously relieve hypoglycaemia. Butyrate, like propionate, is considered to be glucogenic.
—JOHN SEAMER.

See also absts. **788-789** (reports, U.S.A.).

DISEASES, GENERAL

FRESDORF, E. (1949). Über die Entstehung der Krankheiten. [**The cause of disease.**]—*Berl. Münch. tierärztl. Wschr.* No. 11. pp. 149-154. 677

A plea for greater consideration of the resistance of the host as the most important factor in disease. F. made various references to disease in wild animals, and to the effects of captivity and domestication; some of these will be challenged by orthodox workers. HEDIGER (*V.B.* **21,** 1902) has described the successful maintenance and breeding in captivity of at least one of the species mentioned by F. as having such rigid inner "self-laws" that they would "sooner break than let themselves be bent".—ALASTAIR N. WORDEN.

PASQUINI, M. (1952). La radiographie appliquée à la clinique au Centre National des Sports Équestres. [**Radiography of horses.**]—*Rev. Vét. milit.* **7,** 92-108. 678

A brief summary of 77 cases X-rayed during the past two years with 12 plates to illustrate various aspects of diagnosis.—ROY MACK.

JAQUINOT, G. (1950). De l'emploi du Novarsénobenzol dans le traitement de l'emphysème pulmonaire du cheval et du boeuf. [**Novarsenobenzol in treatment of pulmonary emphysema in horses and cattle.**]—*Thesis, Alfort.* pp. 54. 679

J. stated that in 11 of 17 horses, and in 2 oxen, a single i/v inj. of novarsenobenzol (1·5 g./100 kg.) produced remissions of early uncomplicated pulmonary emphysema.
—G. P. MARSHALL.

LEONHARDT, H. (1952). Zur Differentialdiagnose von Pericarditis und Pleuritis tuber-

culosa, Pericarditis traumatica, Leukose des Myo- und Perikards sowie einiger anderer Erkrankungen beim Rind. [**The differential diagnosis of tuberculous pericarditis and pleurisy, traumatic pericarditis/gastritis, myocardial and pericardial leucosis and certain other diseases of cattle.**]—*Mh. prakt. Tierheilk.* **4,** 83-87. 680

A clinical account of the physical characters concerned in the diagnosis of traumatic pericarditis/gastritis and of inflammatory conditions in the thorax due to TB. and other causes.—G. P. MARSHALL.

JENSEN, R. (1952). **Right heart failure.** [Brisket disease.]—*Calif. Vet.* **5,** No. 6. pp. 18-19. 681

Heart failure characterized by general oedema spoken of locally as "brisket disease" occurred in young beef cattle grazed on high pastures (over 7,000 ft.) [number or proportion of animals affected not given]. J. considered anaemia and high altitude to be causally related factors.—ROY MACK.

CLARK, R. & WEISS, K. E. (1952). **Factors contributing towards bloat in ruminants.**—*J. S. Afr. vet. med. Ass.* **23,** 103-106. [Abst. from authors' conclusions.] 682

Most cases are probably due to a combination of factors acting simultaneously. A moderate degree of frothing may not cause bloat *per se,* but, if combined with a certain amount of overfilling or an impaired reflex mechanism or both, acute bloat may result. Evidence of a hereditary tendency to bloat has been obtained in both America and the Union of South Africa.

DI DOMIZIO, G. (1951). Prova di trasmissione della malattia degli edemi dei suini. [**Experimental transmission of oedema disease of pigs.**]—*Atti Soc. ital. Sci. vet.* **5,** 193-194. Only abst. given. [In English, French and Italian. Abst. from abst.] 683

D. claimed to have produced a meningoencephalitis with oedema of the neck region in 4 pigs by the inj. of a bacteria-free suspension of the medulla from a clinical case of oedema disease. All 4 inoculated animals developed paresis and tremors; 2 died, one was slaughtered and one recovered. A control pig in contact with the others remained healthy. D. gave no details of the method of inoculation or the lesions in the affected animals.—J. T. DONE.

YOUNG, G. A. (1952). **A preliminary report on the etiology of edema of newborn pigs.** [After swine fever immunization of the dam.]—*J. Amer. vet. med. Ass.* **121,** 394-396. [Author's summary modified.] 684

Y. reported a disease of new-born pigs characterized mainly by increase of pleural and peritoneal fluids with local or general oedema. From the data available, the condition appears to be associated with injection of attenuated swine fever virus into the dam during the first 30 days of pregnancy. The condition described has been reproduced in controlled experiments by injection of attenuated swine fever virus into non-immune sows 14–16 days after service.

MCERLEAN, B. A. (1952). **Vulvovaginitis of swine.**—*Vet. Rec.* **64,** 539-540. [Author's summary modified.] 685

The author described two outbreaks of vulvovaginitis in swine associated with the feeding of mouldy barley. He reproduced the disease experimentally in two young sows by feeding mouldy barley from one of the outbreaks. He suggested that the ultimate cause might be an oestrogen.

RÖSSLE, R. & APITZ, K. (1951). Atlas der pathologischen Anatomie. Eine Sammlung typischer Krankheitsbilder der menschlichen Organe. [**Atlas of human pathological anatomy. A collection of typical lesions of organs.**] pp. 298. Stuttgart: Georg Thieme. DM 87. 686

This book was commissioned by the publishers in 1940 to form one of a series which already includes atlases of histology, diseases of the skin and reproductive organs, and diseases of the neck, nose and ear. Professor Rössle needs no introduction to pathologists and his co-author was Prosector under him in the Charité Hospital in Berlin. Apitz was killed during the war and most of the text of the book was destroyed in raids on Leipzig. Five more years were needed to complete the atlas.

This book represents a superb achievement of the publisher as well as the authors. Most of the illustrations are colour photographs taken in the *post mortem* room. The text occupies alternate pages and has been kept at the minimum needed to introduce and explain the figures. The atlas runs through the whole field of special human pathology, presenting it to the reader in the form of colour plates which resemble the original material as closely as modern photography makes possible. No one engaged in pathology can fail to appreciate this atlas or to delight in the way its material is presented. A similar atlas devoted to special veterinary pathology would fill a long-felt want: perhaps some publisher may be as enterprising as Georg Thieme and as fortunate in finding veterinary pathologists to provide such a selection of material.—E. G. WHITE.

SIEBENMANN, R. (1952). Die Wirkung von Desoxycorticosterone-Acetat (DCA), Ascorbinsäure und Cortisone (Compound E) auf die Formalinarthritis der Ratte. **[The effect of desoxycorticosterone acetate (D.C.A.) ascorbic acid and cortisone (compound E) on formalin-induced arthritis in the rat.]**—*Schweiz. Z. allg. Path.* **15**, 174-203. [English and French summaries. Author's summary modified.] 687

The acute and chronic formalin-induced arthritis of rats is not inhibited either by desoxycorticosterone or by combined treatment with desoxycorticosterone + ascorbic acid. Desoxycorticosterone enhances mesenchymal proliferation and typical polyarthritis and periarteritis develop. Ascorbic acid stimulates maturation of granulation tissue and the deposition of collagen fibrils.

Cortisone inhibits acute inflammation as well as the proliferation of fibroblasts, their differentiation to fibrocytes and the formation of collagen fibrils.

MITCHELL, H. H. & EDMAN, M. (1952). **The fluorine problem in livestock feeding.**—*Nutr. Abstr. Rev.* **21**, 787-804. 688

A review article. The authors discussed the occurrence of fluorine in soils, waters and plants, the physiological effects of fluorine, the fluorine hazard to livestock, the diagnosis of fluorosis in farm animals, the fluorine content of products from fluoritic farm animals, and the effect of the composition of the ration on the toxicity of fluorine contained in it. They discussed also the toxicity of fluorine compounds, and suggested levels of fluorine permissible in farm rations.—E. COTCHIN.

See also absts. **791** (book, sheep diseases); **793** (book, plastic surgery of the vulva in animals); **794** (book, veterinary surgery).

POISONS AND POISONING

CAMPBELL, W. A. B. (1952). **Methaemoglobinaemia due to nitrates in well-water.**—*Brit. med. J.* Aug. 16th, 371-373. [Abst. from author's summary.] 689

C. reported a case of cyanosis in a month-old infant in Northern Ireland, due to methaemoglobinaemia caused by the presence of nitrate in well-water used for preparing feeds.

The infant made a rapid recovery on treatment with ascorbic acid and by using good water.

C. suggested that similar cases may arise more often than has previously been recognized in rural areas.

ANON. (1952). **Trichloroethylene-extracted soybean meal withdrawn from the market.**—*J. Amer. vet. med. Ass.* **121**, 107-108. 690

Evidence of poisoning of ruminants by soya bean meal extracted by trichloroethylene has been so widespread that it has been withdrawn from the market. One horse was also reported to have been affected.—R. MARSHALL.

ALDRIDGE, W. N. & BARNES, J. M. (1952). **Some problems in assessing the toxicity of the 'organo-phosphorus' insecticides towards mammals.**—*Nature, Lond.* **169**, 345-347. 691

Assessment of toxicity of these compounds was made by *in vitro* observations of their effect as inhibitors of cholinesterase. Very slight impurities may greatly affect the results; some of the substances have greater activity to cholinesterase *in vivo* than *in vitro*, probably owing to the formation of a more toxic derivative. Male and female animals may react differently. In comparative toxicity tests the solubilities of the drugs may influence the route of administration to be adopted.—R. MARSHALL.

BOURNE, R. F. (1952). **Bovine hyperkeratosis (X disease).**—*N. Amer. Vet.* **33**, 609-612 & 615. 692

A general account. No new information.
—C.M.S.

KRAUSE, D. (1952). Die Wirkung der Veratrum-Alkaloide auf das autonome Nervensystem. **[The action of *Veratrum* alkaloids on the autonomic nervous system.]**—*Dtsch. tierärztl. Wschr.* **59**, 193-199. 693

This review of the pharmacology of the alkaloids obtained from *V. album*, *Schoenocaulon officinale* and *V. viride* shows that these agents are unsuitable for use in veterinary practice. Their effects include vasodilatation, fall of blood pressure, bradycardia, vomiting (large doses) and increased peristalsis. Dogs are particularly susceptible.—E. G. WHITE.

MCLEOD, J. A. & BONDAR, G. F. (1952). **A case of suspected algal poisoning in Manitoba.**—*Canad. J. publ. Hlth.* **43**, 347-350. 694

A horse and nine dogs were poisoned by drinking from a lake which, at that time, contained toxic material of algal origin.
—R. GWATKIN.

ROYCE, R. D. (1952). **Poison sedge and cyanogenesis.**—*J. Dep. Agric. W. Aust.* **1**, 497-500. 695

R. reported the sudden death, apparently

without struggling, of 200 sheep. He described a cyanogenetic plant, a species of *Schoenus*, the so-called "poison rush" or "poison sedge", which was incriminated as the lethal agent.
—B. A. FORSYTH.

GUILHON, J. & DARDILLAT, R. (1950). Image sanguine dans le syndrome hémorragique observé, dans la Creuse, chez les bovidés. **[The blood picture in a haemorrhagic disease of cattle in France.]** [Bracken poisoning.]—*Bull. Acad. vét. Fr.* **23**, 473-475. 696

In blood smears from three calves, 4, 6 and 7 months old respectively, in the Department of Creuse, receiving fodder containing bracken, granular leucocytes were few or absent. On P.M. examination the calves had haemorrhagic lesions similar to those that occur in bracken poisoning.—E. COTCHIN.

GARDNER, C. A. & BENNETTS, H. W. (1952). **Poison plants of Western Australia. The toxic plants of the genera *Gastrolobium* and *Oxylobium*.**—*J. Dep. Agric. W. Aust.* **1**, 481-483, 485-487, 489-491 & 493-495. 697

The largest group of native poisonous plants in Western Australia consists of the genera *Gastrolobium* and *Oxylobium*. Sheep, cattle and horses are most susceptible but native animals and birds do not appear to be affected. Symptoms are associated with circulatory and respiratory distress, the heart beat is weak and accelerated, the respiration becomes noisy and panting. Slight haemorrhages from the nostrils and mouth may occur. An increase in frequency of urination may also be noted. Nervous symptoms varying from excitability and muscular spasm to depression and muscular weakness may be seen in sheep. Death may occur rapidly or be delayed for several days. The flowers and seeds are highly poisonous whereas the leaves, which are hard and unpalatable are not so toxic. The plant is usually not attractive to grazing animals. A key to species and distribution is included.—B. A. FORSYTH.

LEPPER, M. H., ZIMMERMAN, H. J., CARROLL, G., CALDWELL, E. R., JR., SPIES, H. W., WOLFE, C. K. & DOWLING, H. F. (1951). **Effect of large doses of aureomycin, terramycin, and chloramphenicol on livers of mice and dogs.**—*Arch. intern. Med.* **88**, 284-295. [Abst. from abst. in *Bull. Hyg., Lond.* **27**, 365-366. (1952).] 698

The capacity of aureomycin administered parenterally in large doses to damage the liver of human patients was confirmed by animal experiment. Doses of 75–150 mg. per kg. given daily for a week intravenously, intraperitoneally or subcutaneously to mice caused similar changes in the liver to those observed in man. Even larger doses by the mouth caused only minimal liver changes. Terramycin has a less marked effect on the liver, and chloramphenicol little or none in the doses it was possible to give without causing death from other effects. Findings in dogs, determined by liver biopsy after intravenous injection of aureomycin, were similar.

PAYNE, H. G., SPENCER, J. N. & SCHULTZ, F. H., JR. (1951). **The oral toxicity of bacitracin.**—*Antibiot. & Chemother.* **1**, 387-391, [Abst. in *Bull. Hyg., Lond.* **27**, 366. (1952). copied *verbatim*. Signed: L. P. GARROD.] 699

Bacitracin, apart from its therapeutic use in man, which is limited by the factor of toxicity, has also been extensively used as an addition to animal and poultry food for the treatment of diarrhoea and the promotion of growth. In order to verify that oral administration is innocuous, enormous doses were given to mice, rabbits and dogs, and produced no ill effects. A study of serum levels in dogs showed that 5,000 units/kgm. had to be given to produce a detectable level, and that attained after 10 times this dose never exceeded 0·55 unit/ml.

BELOT, M. (1952). De la toxicité pour les chevaux d'une poudre acaricide à base d'hexachlorocyclohexane. **[Toxicity for horses of an insecticide powder containing benzene hexachloride.]** — *Maroc. Méd.* **31**, 472-473. 700

B. reported toxic symptoms and fatal illness in five horses after ingestion of 50 g. of a pest control powder containing 21% benzene hexachloride (isomer content not ascertained).
—G. P. MARSHALL.

LEES, T. W. (1952). **Hypersensitivity, stress, and toxicity.**—*Brit. med. J.* Aug. 16th, 363-365. [Author's summary copied *verbatim*.] 701

Thyroidectomy impairs the allergic skin reaction in rabbits rendered hypersensitive to a foreign protein (horse serum). This impairment of the allergic response is not specific for thyroidectomy and can be produced by other noxious procedures which derange general metabolism. It is therefore suggested that the action of A.C.T.H. and cortisone in the rheumatic and hypersensitivity diseases is a toxic one and is not specific.

See also absts. **732** (rat poison); **785-786** (doping).

PHARMACOLOGY AND GENERAL THERAPEUTICS

(For treatment of specific infections see under the appropriate disease.)

BINGHAM, D. L. C. (1952). **Intra-arterial transfusion.**—*Lancet.* **263,** 157-159. [Author's conclusions and summary modified.] 702

B. described the treatment of peripheral circulatory collapse or shock, with special reference to intra-arterial transfusion. Experience of more than 100 cases suggested that intra-arterial transfusion was far superior to intravenous transfusion both in the treatment of established shock and as a preventive measure in operations where serious shock is expected.

Apparatus for intra-arterial transfusion should be immediately available in the operating-room and casualty departments of all hospitals, in advanced hospitals and field ambulances on active service, and in blood-banks and treatment centres of civil defence organisations.

POLLITZ, H. (1951). Lachesis in der tierärztlichen Praxis. **[Snake venoms in veterinary practice.]**—*Tierärztl. Umsch.* **6,** 127-129. 703

A clinical note advocating the administration of snake venom to stimulate antitoxin production in animals requiring such treatment, the suggestion being made that in many cases this is better treatment than the use of penicillin or of sulphonamides.—F. R. HARRIS.

GLENNEY, W. C., BATORY, C. F. & HUEBNER, R. A. (1952). **Canine penicillin blood levels obtained with parenteral benzethacil.**—*Amer. J. vet. Res.* **13,** 555-556. [Authors' summary modified.] 704

Intramuscular injection of 300,000 units of benzethacil (N,N'-dibenzylethylenediamine dipenicillin G) into medium-sized dogs resulted in a blood serum-penicillin level usually considered effective for 8–15 days. Similar injections of potassium penicillin G resulted in satisfactory serum levels for 12 hours and of procaine penicillin G for 24 hours.

SCHIMMEL, N. H., WILSON, W. W., MATTEUCCI, W. V. & FLIPPIN, H. F. (1952). **The hydriodide of diethylaminoethylester penicillin-G, neopenil. III. Unusually high penicillin concentrations in cerebrospinal fluid following intramuscular administration.**—*Amer. J. med. Sci.* 224, 247-251. [Abst. from authors' summary.] 705

The authors reported a study of the relative penicillin concentrations in the spinal fluid produced by procaine penicillin-G, potassium penicillin G, dibenzyl penicillin-G and "neopenil". Neopenil produces spinal fluid levels about ten times greater than the levels produced by equal doses of other types of penicillin-G in the same patients. The increased spinal fluid levels are thought to be due to a pharmacological property of the neopenil, rather than to an increased diffusion gradient. The authors discussed whether or not the penicillin in the spinal fluid is active and discussed the importance of considering the tissue concentrations produced by an antibiotic.

WORATZ, H. (1950). Wird Penicillin durch Metallspritzen unwirksam? **[Effect of metal syringes on penicillin.]**—*Dtsch. med. Wschr.* **75,** 219. 706

Penicillin solutions remain in contact with the metal of a syringe for so short a time before injection that only an insignificant quantity is rendered ineffective.—W. R. BETT.

TOMAN, J. E. P. (1952). **Neuropharmacology of peripheral nerve.**—*Pharmacol. Rev.* **4,** 168-218. [Abst. from author's summary.] 707

T. discussed some basic properties of peripheral nerve, with notes on their measurement and on some typical effects of drugs. He described the actions of a variety of drugs on peripheral nerve and presented a suggested empirical scheme for the tentative classification of such drugs. He discussed interrelationships between drugs in several categories of mechanism of action, with particular attention to the contradictory actions of presumed chemical mediators and blocking agents.

SHROPSHIRE, R. F., GINSBERG, J. R. & JACOBI, M. (1952). **The nonsurgical treatment of cataract.**—*Science.* **116,** 276-278. 708

Parenteral administration of fish lens protein extracts causes induced cataracts in experimental animals to regress to disappearance. Promising results are reported in human patients with cataract.—W. R. BETT.

DESMARAIS, A. & LEBLANC, J. (1952). **"*In vivo*" and "*in vitro*" effect of ascorbic acid and ACTH on the rat adrenal cortex.**—*Canad. J. med. Sci.* **30,** 157-162. 709

Histochemical examination of the adrenal glands of hypophysectomized albino rats of the Wistar strain which had been given ascorbic acid and A.C.T.H. revealed enlargement of the cortex and a decrease of sudanophilic substances, as compared to the adrenal glands of hypophysectomized rats which had received only

A.C.T.H. Experiments on incubated slices of adrenal glands showed that ascorbic acid and A.C.T.H. had a synergistic effect on the secretory activity of the cells of the adrenal cortex.
—R. Gwatkin.

Jones, O. G., Scales, J. T. & Wadsworth, F. J. (1952). **Use of cyclopropane and oxygen in closed circuit anaesthesia of the goat.**—*Vet. Rec.* **64,** 112. 710

The authors emphasized the value of cyclopropane and oxygen in closed circuit for the anaesthesia of the goat, pointing out the advantages of cyclopropane when thus used.
—John Seamer.

Wilson, F. D. (1952). **Anaesthesia for the eye — new technique.**—*Indian. vet. J.* **28,** 362-364. 711

An account of the use of novocaine injections introduced about one inch from the outer canthus of the eye in cattle, about half an inch below it and one inch behind it in ponies, and about half an inch postero-internally above the inner canthus in dogs.—D. R. Uppal.

See also absts. **549** (penicillin content of milk after intramammary infusions); **552** (streptomycin resistance); **556** (actions of streptomycin and penicillin on *B. anthracis*); **557** (effect of merthiolate on *B. anthracis* spore suspensions); **561** (treatment of TB.); **568** (Johne's disease); **582-583** (naphthoquinone derivatives in brucellosis); **595** ("penotrane"); **618** (treatment of bovine anaplasmosis with trifloryl); **630** (garlic treatment of distemper); **679** (novarsenobenzol in pulmonary emphysema); **687** (D.C.A. and cortisone therapy of formalin-induced arthritis in rats).

PHYSIOLOGY, ANATOMY AND BIOCHEMISTRY

Dryerre, H. [Emeritus Professor of Physiology, Royal (Dick) Veterinary College.] (1951). **Aids to physiology.** pp. vii+327. London: Baillière, Tindall and Cox. 4th Edit. 7s. 6d. 712

This 4th edition appears nine years after the 3rd; during that time great advances have been made particularly in the biochemical aspects of physiology. This has necessitated considerable rewriting, rearrangement and increased selectivity. The book caters for the needs of the medical student rather than for those of students of comparative or veterinary physiology, but provides an excellent guide to the basic aspects of general physiology.—M.C.

Morrison, P. R. & Ryser, F. A. (1952). **Weight and body temperature in mammals.**—*Science.* **116,** 231-232. 713

Rodbard's assertion [*V.B.* **20,** 3116] that the mean normal body temperature of various species of mammals bears a simple relation to the body weight, could not be substantiated.
—A. Ackroyd.

Yang, S. H. (1952). **A method of assessing cutaneous pigmentation in bovine skin.**—*J. agric. Sci.* **42,** 465-467. [Abst. from author's summary.] 714

Since the pigmentation of the skin cannot be assessed by visual examination of the hair or hide, Y. described a simple and convenient method of grading the cutaneous pigmentation of cattle, based on the microscopic examination of skin sections. He assessed the degree of cutaneous pigmentation of the skin of 20 body regions of three Ayrshire cows, two Ayrshire bull calves, two Sudanese zebu bulls, one Sudanese zebu cow and one Jamaican zebu cow by this method.

Cowie, A. T., Duncombe, W. G., Folley, S. J., French, T. H., Glascock, R. F., Massart, L., Peeters, G. J. & Popják, G. (1951). **Synthesis of milk fat from acetic acid ($CH_3{}^{14}COOH$) by the perfused isolated bovine udder.**—*Biochem. J.* **49,** 610-615. 715

Using the method described by Peeters and Massart [*V.B.* **21,** 546] in which the two halves of an udder can be perfused separately, the authors perfused for 2 hours an udder from a cow giving 12 kg. milk per day. One half of the udder was perfused with labelled acetate and the other with labelled carbonate and heavy water. In the acetate half, the specific activity of the blood CO_2 suggested that free acetate was rapidly taken up by udder tissue and used as a substrate for the synthesis of milk fatty acids. On the other hand, the specific activity of the fatty acid fraction isolated from the bicarbonate perfused half was very low as also was the deuterium content. Evidence was also obtained which confirms that cholesterol is synthesized in the udder and that the acetate carbon is used in the formation of lactose.—J. A. Nicholson.

Whittlestone, W. G., Bassett, E. G. & Turner, C. W. (1952). **A phylogenetic study of the milk "let-down" hormone.**—*Proc. Soc. exp. Biol., N.Y.* **80,** 191-194. [Authors' summary slightly modified.] 716

A factor or factors which will stimulate the "let-down" of milk in the sow was shown to be present in the posterior pituitary gland of representatives of the monotremes, the mar-

supials, and the placentals. The pituitary of a marlin or sword fish also caused milk "let-down" in a sow.

CROSS, B. A. & HARRIS, G. W. (1952). **The role of the neurohypophysis in the milk-ejection reflex.**—*J. Endocrinol.* **8**, 148-161. 717

Intravenous injection of posterior pituitary extracts or stimulation of the supraoptico-hypophysial tract in anaesthetized lactating rabbits caused increased milk flow from a cannulated teat duct.—R. MARSHALL.

THOMAS, J. W. & MOORE, L. A. (1951). **Variations in heart rate of dairy cows.**—*J. Dairy Sci.* **34**, 321-328. 718

The heart beats of dairy cows increased during the last three months of pregnancy, during oestrus and when the total digestible nutrients were increased above natural requirements. They decreased during lactation. There was no seasonal difference when total digestible nutrients were kept at normal requirement.

—JAS. G. O'SULLIVAN.

TRUM, B. F. (1952). **Normal variances in horse blood due to breed, age, lactation, pregnancy, and altitude.**—*Amer. J. vet. Res.* **13**, 514-519. [Abst. from author's summary.] 719

An account of the cell counts and haemoglobin content of the blood of 265 Bolivian remount horses. A breed and age difference in cell counts was indicated as well as a difference during lactation, but sex had no significant effect. Pregnancy seems to result in a near term anaemia and a *post-partum* polycythaemia. Neonatal polycythaemia was noted.

CHERRY, L. M. & BANKS, A. W. (1952). **A note on the blood pyruvic acid levels of normal horses at rest and after exercise.**—*Aust. vet. J.* **28**, 106-108. 720

The mean pyruvic acid levels in the blood of horses at rest in stalls and in paddocks were $0{\cdot}8 \pm 0{\cdot}04$ and $1{\cdot}15 \pm 0{\cdot}045$ mg. per 100 ml. respectively. After exercise there was a mean increase of $0{\cdot}85 \pm 0{\cdot}39$ mg. per 100 ml.

—R. L. REID.

WILDING, J. L., KIMBALL, A. W., WHITAKER, M. W., TRUM, B. F. & RUST, J. H. (1952). **Some blood values of the southwestern burro** (*Equus asinus asinus*).—*Amer. J. vet. Res.* **13**, 509-513. 721

A summary and statistical analysis of blood values found in 108 donkeys of both sexes ranging in age groups from one to five years and over.

They cover data for red and white corpuscles, haemoglobin and sedimentation.

GOVINDAN NAYAR, K. N., NAMBIAR, K. T. K. & SATCHIDANANDAM, V. (1951). **Blood groups in sheep. (Part II).**—*Indian vet. J.* **28**, 143-146. 722

The authors classified 150 blood samples on the basis of iso-agglutination, using normal sera, into groups 1, 2 and 3, similar to those described by Andersen.—K. C. SINHA.

COPAIRA, M. A. (1949). Estudios hematológicos en auquénidos. **[Haematological studies on alpacas and vicunas.]**—*Rev. Fac. Med. vet., Lima.* **4**, 73-85. 723

The results of observations on blood samples (red and white cell counts, sedimentation rate, haematocrit readings and Hb. content) from 116 healthy alpacas and 12 healthy vicunas were examined statistically. The results were given in numerous tables and histograms. Comparisons were made with results reported by other authors.—I. W. JENNINGS.

BEHRENS, H. (1951). Der Liquor cerebrospinalis des Pferdes. **[The cerebrospinal fluid of the horse.]**—*Dtsch. tierärztl. Wschr.* **58**, 290-293 & 307-308. 724

B. considers that examination of the c.s.f. may play a more important part in the diagnosis and treatment of certain diseases of the horse than heretofore. He described a method of occipital puncture which he claimed to be safe and certain and gave the normal composition of c.s.f.—J. A. NICHOLSON.

FIELD, E. J. (1952). **Vacuolated cells in the dorsal root ganglion of the rabbit.**—*J. comp. Path.* **62**, 249-251. [Abst. from author's summary.] 725

Vacuolated nerve cells were present in the spinal ganglion of 14 of 20 healthy rabbits. They may result from unusual activity of the cells. They resembled vacuolated nerve cells met with in scrapie of sheep.

MAASSEN, A. P. (1952). **Adrenals and bone-growth.**—*Acta endocrinol.* **9**, 135-140. [In English. Author's summary copied *verbatim.*] 726

In young rats, adrenalectomy stimulates epiphyseal growth of bone under paired-feeding conditions, and retards periosteal bone-formation under both paired- and ad libitum-feeding conditions; in both cases the specific gravity of the bone is diminished. Testosterone propionate when given to adrenalectomized spayed rats stimulates periosteal bone-formation. In analogy the absence of adrenal N-hormone is believed to

cause the decrease in diameter, the absence of other cortical substances being held responsible for the tendency to increased longitudinal growth.

HARROW, B., STONE, G. C. H., WAGREICH, H., BOREK, E. & MAZUR, A. (1950). **Laboratory manual of biochemistry.** pp. ix+149. Philadelphia & London: W. B. Saunders Company. 3rd. Edit. 12s. 6d. 727

This is truly a practical manual for the biochemistry student. Blood and food chemistry together with that of enzymes and urine are most adequately covered by the experiments set forth. Details of each experiment are clearly described, cautions are given where accidents may occur, and short questions after the practical work will stimulate productive thought on the subject under consideration. There is a good passage on colorimetry and apparatus is well described. The appendix will assist those preparing stock solutions and reagents. In short this will prove a most useful manual to those studying and teaching biochemistry.

—JOHN SEAMER.

See also abstr. **647** (blood groups of mules); **792** (book, anatomy).

PUBLIC HEALTH, VETERINARY SERVICES AND VETERINARY EDUCATION

HUDEMANN, H. (1952). Vorschläge zur Frage der Milchhygiene. [**Milk hygiene.**]—*Z. Hyg. InfektKr.* **134,** 81-97. 728

H. discussed the operation of the German Milk Regulations of 1930 since that date and suggested alterations and additions.

—S. E. FOX.

MILLER, A. R. [Chief of the Federal Meat Inspection Service, U.S. Department of Agriculture.] (1951). **Meat hygiene.** pp. 420. London: Henry Kimpton. 52s. 6d. 729

This is an excellent book, treating the various aspects of the subject of meat inspection in the U.S.A. The layout of abattoirs and other buildings is not dealt with. There are fourteen chapters, an appendix setting out the U.S. Federal Meat Inspection Regulations and an alphabetical index.

Emphasis is laid on *ante-mortem* inspection and the meticulous care necessary in the examination of carcasses and organs at the time of slaughter. The various diseases and pathological conditions met with, along with their P.M. appearances and significance are detailed and great prominence is given to trichinosis, to which a whole chapter of 24 pages is allocated.

Meat processing and packing are dealt with at considerable length. Although written primarily for Americans, it will prove a very valuable adjunct to any meat inspector's library.

—D. S. RABAGLIATI.

SHARP, J. G. & SMITH, G. H. (1952). **The changes occurring in whalemeat during storage in the frozen state.**—*J. Sci. Food Agric.* **3,** 179-185. 730

The rancid flavour which develops in the surface layer of whale meat during storage at −10°C. and which is caused by oxidation of the highly unsaturated fatty acids, may be partially prevented by wrapping the meat in polyvinylidene chloride film, or wholly prevented by encasing in ice.

—CHARLOTTE M. WOOD.

NIELSEN, F. W. (1952). L'importation de la farine de viande, d'os et de sang, et le danger de l'introduction des maladies épizootiques parmi les animaux domestiques. [**Danger of importation of disease by bone meal, meat meal and blood meal.**]—*Bull. Off. int. Epiz.* **38,** May. pp. 606-619. [English summary.] 731

The detection of pathogenic bacteria in samples of 16 out of 333 shipments of these materials makes it desirable that countries which have no control of sterilizing equipment nor veterinary inspection of plant should establish these measures for the safety of the livestock of importing countries.—R. MARSHALL.

REIFF, M. & WIESMANN, R. (1951). Untersuchungen über ein neues Rodentizid mit kumulativer Wirkung auf Basis der Cumarin-Derivate. [**A rat poison containing a coumarin derivative.**]—*Acta trop., Basle.* **8,** 97-130. [In German. English and French summaries.] 732

3 - (α-*p* - Chlorophenyl-β-acetyl ethyl)-4-hydroxycoumarin is a cumulative rat poison. It can be either sprinkled in powder form or used on bait.—E.G.

MCCALLAM, J. A. (1952). **The United States Army Veterinary Service.**—*Canad. J. comp. Med.* **16,** 161-168. 733

The first mention of a veterinary surgeon occurred in an Act of Congress in 1848 which provided for the hire of veterinarians. In 1901, provision was made for 42 veterinarians, two with each regiment of cavalry and one with each regiment of artillery, with the pay and

allowances of second lieutenant. The Veterinary Corps was established in 1916 as a component of the Medical Department of the Army. The author discussed the activities of the Corps under organization and administration, food inspections, animal service and investigation and control of diseases of animals transmissible to man. It is believed that the work of the U.S. Army Veterinary Corps has focussed the attention of many people, especially medical and other scientific persons, on the several fields of veterinary medicine related directly and indirectly to human health and welfare.

—R. GWATKIN.

HERMAN, C. (1952). **Wildlife Disease Association.** [Correspondence.]—*J. Amer. med. Ass.* **150,** 52. 734

The Wildlife Disease Association was formed in March 1952 for the purpose of closer co-ordination between investigators of wildlife disease problems, such as population dynamics, nutrition, animal pathology, bacteriology, virology, parasitology, immunology, toxicology, and therapeutics. Among its functions are the compilation of a directory of workers and their specialities in this field, and keeping members informed of current studies and developments.

—W. R. BETT.

ANDERSON, R. J. (1950). **Protection for the laboratory worker.**—*Publ. Hlth Rep., Wash.* **65,** 463-465. 735

[This is a very important editorial article on a subject of great moment, in a special issue of *Public Health Reports* devoted to TB. control. The following quotations merit repetition:—]

" Over the past few years it has become increasingly evident that bacteriologists who work in diagnostic and research laboratories are exposed to hazards of infection far beyond those met in ordinary living. Such studies as the one by Sulkin and Pike on viral infections contracted in laboratories give us an estimate of the unseen and frequently unrecognized dangers present in the laboratory. Of the 222 cases of laboratory infection reported in that study, only 27 were due to known accidents. . . ."

" By using sieve type air samplers, placed at appropriate distances around the laboratory working area," it was found that " bacterial aerosols were released during such common laboratory operations as the removal of stoppers from dilution bottles, removal of wet plugs from broth culture tubes, and removal of an inoculum from a vaccine bottle with a hypodermic syringe. The production of bacterial aerosols by pipetting, pouring, and vigorous agitation of dilution blanks was further shown by means of high-speed photography in a study by Johansson and Ferris, also at Camp Detrick.

" The conclusion that we can draw from these studies, in relation to the tuberculosis laboratory, presents us with a grave problem in safe-guarding the worker. . . .

" Since the risks following exposure to tubercle bacilli depend a great deal upon the inoculum size, it seems important to stress the fact that the use of techniques which avoid heavy exposure will undoubtedly reduce the incidence of laboratory infection."

It has been suggested "that the most important single item in a laboratory safety program is the provision of adequate bacteriological transfer cabinets, properly equipped with ventilating devices so that aerosols will be swept away. The design of such hoods is a matter of great importance, since improperly designed hoods hinder laboratory operations."

The cost of precautionary measures is an item to receive consideration. " Proper care slows down procedures. Undoubtedly the laboratory where all possible measures are taken to minimize hazards will spend considerably more for the same operations than the laboratory which sacrifices safety to economy."

See also absts. **549** (penicillin content of milk after intramammary infusions); **795** (book, meat inspection).

REPRODUCTION AND REPRODUCTIVE DISORDERS

JAMES, J. P. (1952). **Artificial breeding and herd improvement in New Zealand.**—*Vet. Rec.* **64,** 557-563. Discussion pp. 563-564. **736**

An account of the manner in which artificial insemination is applied to the improvement of the New Zealand Dairy herd. The problem is simplified by the presence of only one breed but made more difficult by the short breeding period of two months. J. gave tables to demonstrate how the use of Merit Sires has improved production in both high and low yielding herds.

—E. J. H. FORD.

VLACHOS, C. (1952). **[Cows' milk as a diluent for bull semen.]**—*Delt. Hellen. kten. Hetair.* **2,** No. 5. pp. 23-30. [French summary.] **737**

The author compared as diluents for bull semen boiled cow's milk and egg yolk plus N/15

sodium citrate. When semen diluted in this way was used the conception rates were 76·83% (82 cows) and 72·55% (510 cows) respectively.
—J. M. Tait.

Sanfile, V. (1952). Il latte come diluitore del liquido seminale. (Nota preventiva). [**Milk as a semen diluent. Preliminary note.**]—*Zooprofilassi.* **7**, 257-259. 738

Centrifuged, boiled and filtered milk is a good semen diluent. Pregnancy percentages obtained in 870 cows using semen diluted with milk were 3% higher than those obtained using the Salisbury diluent.—I. Martini.

Jacquet, J. (1952). Emploi de dilueurs à base de lait pour la conservation du sperme des taureaux. [**Milk in semen diluents.**]—*Rep. IInd Int. Congr. Physiol. anim. Reprod. Copenhagen,* 1952. **3**, 111-116. [In French. English and German summaries. Abst. from English summary.] 739

J. described a powdered preparation as a diluent for bull semen, consisting of dried milk, mineral salts (citrates and phosphates), glucose, cholesterol, phosphoaminolipoids and antibiotics. It is dissolved with redistilled water immediately before use, 10% of fresh egg yolk being then added. J. stated that the keeping properties of the diluent are very high, that it facilitates microscopic examination, suppresses agglutination of spermatozoa and slightly improves their fertility.

Rao, C. K. (1952). **Mercurochrome as semen stain.**—*Indian vet. J.* **28**, 423-424. 740

A 1% aqueous solution of mercurochrome (disodium hydroxymercuridibromfluorescein) has been found to be very suitable for staining semen smears of farm animals. The solution stains spermatozoa within 15–30 sec. and the bright pink colour of stained spermatozoa lasts for several months.—D. P. Mukherji.

Swayne, V. R., Beiler, J. M. & Martin, G. J. (1952). **Spermicidal effect of certain physiologically active substances.**—*Proc. Soc. exp. Biol., N.Y.* **80**, 384-386. [Authors' summary slightly modified.] 741

A number of compounds of different chemical structure and physiological effects were tested to determine their spermatocidal properties. Several were found to be active, including a group of pteroylglutamic acid analogues.

Lindahl, P. E. & Kihlström, J. E. (1952). **On ripening and agglutination in bull spermatozoa.**—*Rep. IInd Int. Congr. Physiol. anim. Reprod., Copenhagen,* 1952. **1**, 70-74. [In English. French and German summaries. Authors' summary copied *verbatim.*] 742

A correlation between the light reflecting capacity of bull spermatozoa and fertility was demonstrated. In an experimental analysis of this relationship it was important to avoid disturbing agglutination. The properties were studied of a protein, termed "sperm-antagglutin" to be found in sperm plasma, and having the ability of counteracting and neutralizing agglutination.

Lindahl, P. E. & Kihlström, J. E. (1952). **Alterations in specific gravity during the ripening of bull spermatozoa.**—*J. Dairy Sci.* **35**, 393-402. [Authors' summary copied *verbatim.*] 743

Determinations of the specific density of spermatozoa in ejaculates collected from normal dairy bulls in regular service were performed by centrifugation in umbradil-methylglucamine-salt solutions of different specific gravities. A negative correlation between the mean specific gravity of the spermatozoa and the frequencies of unripe spermatozoa (having a residual protoplasmic drop) was found, indicating a lower specific gravity in these than in ripe and over-ripe (non-motile) ones. The distribution of the three kinds of spermatozoa between the sedimenting and floating fractions of cells supports this conclusion, and suggests a higher specific density of over-ripe than of ripe spermatozoa. The process of ripening thus implies a continuous rise in density.

Rollinson, D. H. L. (1951). **Studies on the abnormal spermatozoa of bull semen.**—*Brit. vet. J.* **107**, 203-214, 258-273 & 451-468. 744

Findings from 91 samples of semen from 29 bulls which were either sterile or of low fertility and 33 samples from 14 fertile bulls were compared and classified according to morphology and staining characteristics. The eosin-opal blue method of Emik and Sidwell is used as a supra-vital stain. Three hundred spermatozoa are used for counting.

Head abnormalities have 59 sub-divisions. Importance is attached to middle-piece abnormalities—over 2% indicating infertility.

While motility is best in highly fertile bulls, the motilty curve in the infertile and sterile group did not run parallel with fertility.

Fall in density between second and third ejaculates is greater in infertile bulls.

A comprehensive bibliography and excellent photographs are included.
—J. M. Swanney.

GUNN, R. M. C. (1952). **Cyclic changes in spermatogenesis in rams.**—*Vet. Rec.* **64,** 580-581. **745**

G. reviewed the available information on factors affecting spermatogenesis in the ram and showed that length of daylight is the controlling factor in cold regions and that diet, temperature and thyroid activity all play a part in warmer regions.—E. J. H. FORD.

ADLER, H. C. (1952). Undersøgelser over ikke-omløberprocent som mål for insemineringstyres frugtbarhed. **[Percentage of non-returns to service as a measure of the fertility of bulls in artificial insemination.]**—*Nord. Vet.-Med.* **4,** 116-126. [In Danish. English and German summaries. Abst. from English summary.] **746**

The work was based on 9,127 first inseminations with 13 Red Danish bulls. Non-returns between 30–60 days were 15% higher, and between 60–90 days 5·5% higher, than the proportion ultimately calving. It appeared that the 30–60 day percentage was very widely variable among individual herds, whereas the 60–90 day percentage was relatively constant in all. It was shown that Monday inseminations were somewhat less effective than those on other days, there being no insemination work on Sundays.
—F. L. M. DAWSON.

BONADONNA, T. (1952). Identificazione della paternità nei bovini e fecondazione artificiale. **[Determination of paternity in cattle.]**—*Progr. vet., Torino.* **7,** 381-383. **747**

A description of the method used for the determination of paternity in cattle according to blood groups [see Ferguson, *V.B.* **19,** 1540]. B. recommended the extension of these criteria to artificial insemination in Italy.—I. MARTINI.

MILLAR, R. (1952). **Forces observed during coitus in Thoroughbreds.**—*Aust. vet. J.* **28,** 127-128. **748**

M. described an apparatus whereby changes of intra-uterine pressure may be detected in the intact animal during coitus. In the two mares tested a strong negative pressure was found to develop in the uterus during coitus, and it is suggested that this plays an important part in normal fertility by ensuring the passage of semen through the cervix.—C. R. AUSTIN.

MAHAFFEY, L. (1952). **Studies of fertility in the Thoroughbred mare. III. Patterns of oestrus cycles and their influence on fertility.**—*Aust. vet. J.* **28,** 53-71. **749**

A detailed account of observations on the oestrous cycles, sexual behaviour, and reproductive performance of mares at a Thoroughbred stud. M. described six groups in which mares may be placed according to their relative fertility or infertility, and discussed this grouping in relation to breeding practice or corrective treatment.—C. R. AUSTIN.

AUSTIN, C. R. (1952). **The 'capacitation' of the mammalian sperm.** [Correspondence.]—*Nature, Lond.* **170,** 326. **750**

Female rats were killed at different times after coitus and the ova removed from the Fallopian tubes. After an hour only a few spermatozoa were found around each ovum and none had penetrated. Penetration increased to the sixth hour when it was 97·6%. These results are quoted to support the theory that a period of "capacitation"—in which the spermatozoa undergo some physiological change—is needed before they can penetrate the ova.
—R. G. MARES.

FIORENTINO, A. & CARETTA, A. (1951). Sull'uso di ormoni gonadotropi nel toro. **[On the use of gonadotrophins in the bull.]**—*Fecond. Artif., Milano.* **12,** 542-547. [English and German summaries. Abst. from English summary.] [Published in *Zootec. Vet., Milano.* **6,** Nos. 9-10.] **751**

Bulls were treated with pituitary gonadotrophin A and a mixture of gonadotropins A and B with varying results. In one case libido increased and the ejaculates diminished in volume but contained more active spermatozoa; in two other cases both volume of ejaculate and activity of spermatozoa increased.—E. J. H. FORD.

WILLETT, E. L. (1952). **Response of dairy cows to repeated administration of gonadotrophins for producing superovulation.**—*Rep. IInd Int. Congr. Physiol. anim. Reprod., Copenhagen,* 1952. **1,** 166-167. [In English. French and German summaries. Abst. from author's summary.] **752**

In 13 cows injected with gonadotrophins for the purpose of producing superovulation two or more times, there was, in general, a progressively smaller number of corpora lutea with each successive treatment. Little or no response followed the third or fourth treatment.

NISHIKAWA, Y., HARADA, N. & SUGIE, T. (1952). **Studies on the effect of continuous injections of stilboestrol on the functions of ovaries in mares.**—*Rep. IInd Int. Congr. Physiol. anim. Reprod., Copenhagen,* 1952. **1,** 173-180. [In English. French and German summaries. Abst. from authors' summary.] **753**

The authors found that when mares were injected successively with stilboestrol at their corpus luteum stage, the following three kinds of abnormal sexual phenomena developed: (1) suppression of the growth of ovarian follicles; (2) appearance of male sex behaviour from about the 15th day after the start of injections; (3) activation of ovarian functions through the non-breeding season.

These phenomena were not specific to the synthetic hormone, but could be produced also with oestrogen and were not attributable to the presence of a corpus luteum.

KRIISA, A. (1952). Über die Wirkung des Diaethylstilboestrols bei puerperalen Störungen des Rindes. [**Effect of stilboestrol in retention of the placenta in cows.**]—*Rep. IInd Int. Congr. Physiol. anim. Reprod., Copenhagen,* 1952. **2,** 61-66. [In German. English and French summaries. Abst. from English summary.] 754

Stilbol (diethylstilboestrol) is of great value in the treatment of retention of the placenta, and it can also improve the general state of health of the animal by furthering the discharge of toxic secretions from the uterus. To obtain an immediate effect K. recommended larger doses, particularly in the treatment of puerperal disturbances due to retention of the placenta. Doses of 60 to 200 mg. of stilbol have had no harmful effects either on the general health or on the sex organs of the animals.

Stilbol has no clinically demonstrable effect on the ovaries, at any rate no ripening of follicles occurs, in spite of pronounced manifestations of oestrus. K. stated that there is no risk of causing ovarian cysts, although cysts did appear in six cases. This was, however, in animals known to have a predisposition to cyst formation.

SPÖRRI, H. & CANDINAS, L. (1951). Eine neue Methode zur Ausschaltung des Geschlechtstriebes und Verbesserung der Mastleistung beim Schwein. [**Fattening of pigs by oestrogens.**]—*Schweiz. Arch. Tierheilk.* **93,** 129-141. [English, French and Italian summaries.] 755

Oestrus was suppressed for several months by a single injection of 20–40 mg. stilboestrol or oestradiol preparations, if injected between the 5th and 18th days of oestrus (corpus luteum phase).—ROY MACK.

MESCHAKS, P. (1952). **Hormonal infertility in bulls.**—*Rep. IInd Int. Congr. Physiol. anim. Reprod., Copenhagen.* 1952. **2,** 43-47. [In English. French and German summaries. Abst. from author's summary.] 756

Using the Zimmermann colorimetric method for quantitative determination of the excretion of neutral steroids in the urine of 25 normal bulls, 19 bulls with lowered ability to serve, and 12 bulls with disturbances in spermatogenesis, the excretion in these three groups was respectively 22, 28 and 35 mg. per litre.

The neutral steroids in the urine of bulls are different from those excreted in human urine, therefore the milligramme values are only equivalent to androsterone.

M. considers that inability to serve and defective spermatogenesis in bulls of the Swedish Red breed are only degrees of the same condition which is associated with increased excretion of neutral steroids in the urine. Difference between groups were statistically significant.

PAREDIS, F. (1952). Aspects hormonaux de la stérilité bovine. [**Hormonal aspects of sterility in cattle.**]—*Conf. de la journée d'étude sur la Reproduction et Troubles de la Reproduction chez les Bovins.* 24th Feb. 1952. pp. 89-100. 757

A general account of bovine infertility dealt with under headings of "Anaphrodisia", "Cystic degeneration of ovaries" and "Infertility with normal oestrus".

In the first category, gonadotrophic hormone from urine of pregnant women, *e.g.* "prolan", "pregnyl" is superior to pregnant mare's serum, giving 58% pregnancies. P. described a method of treating cystic ovaries by direct injection of this hormone (500 I.U.) into the ovary through the vaginal wall, giving 60% cure following one injection.—J. M. SWANNEY.

HIGNETT, S. L. (1951). **Sterility in dairy herds.** [Address to the British Cattle Breeders Club, January, 1951.] pp. 22. London: The British Oil and Cake Mills. [Mimeographed.] 758

H. reviewed factors influencing the herd breeding problem and stressed their inter-relationship. He laid emphasis on the importance of correct balance between calcium and phosphorus intake, and reference is made to the work which he and his colleagues have done on this, and related problems.—R. G. MARES.

DIMITROPOULOS, E. (1952). Quelques aspects du problème de la fécondation chez les bovins. [**Factors affecting fertility in cattle.**] —*Ann. Méd. vét.* **96,** 253-266. 759

An account of a method of testing the fertility of newly acquired bulls, together with a review of the literature on factors influencing

fertility. D. discussed the influence of climatic conditions in Belgium on the fertility of male and female cattle.—G. V. Laugier.

van der Kaay, F. C. & ten Thye, J. H. (1952). **Investigations into the causes of sterility of cows and mares.**—*Rep. IInd Int. Congr. Physiol. anim. Reprod., Copenhagen.* 1952. **2,** 199-214. [In English. French and German summaries.] **760**

In 59 out of 355 herds in Holland, services per conception ("efficiency number") exceeded 2. The efficiency number tends to fall in herds where A.I. is used for several years in succession. Only 25% of infertile mares show an endometritis.—J. M. Swanney.

Cordiez, E. (1950). Ravitaillement protidique et pouvoir fécondant du taureau. **[Protein content of the diet and fertility in bulls.]**—*Ann. Med. vét.* **94,** 618-663. **761**

A comprehensive review, dealing with publications by American, British, Scandinavian, Russian, French, German and other workers. The results obtained in such studies have been conflicting regarding the influence of protein, quantitatively anl qualitatively, on the fertility of bulls, and C. attributed these differences to the varying experimental conditions. He emphasized the need for establishing the dietary requirements for reproduction and concluded that the influence of dietary protein on fertility is far from negligible.—Alastair N. Worden.

Murphree, R. L., Whitaker, W. M., Wilding, J. L. & Rust, J. H. (1952). **Effects of whole body exposure to irradiation upon subsequent fertility of male rabbits.**—*Science.* **115,** 709-711. **762**

After whole body exposure of 8 male rabbits to X-rays and their mating to normal females fertilization rate was unimpaired, but a high foetal mortality rate was noted.—E. J. H. Ford.

Lesbouyries, G. & Bonnaud, P. (1952). Infécondité de l'étalon par aspermiogénèse. **[Aspermatogenesis in a stallion.]**—*Rec. Méd. vét.* **128,** 400-404. **763**

Cases occur in which degeneration of the seminiferous tubules cannot be attributed to disease or other specific cause. One such case was described in which a sexually keen stallion produced semen devoid of spermatozoa. It was castrated. A description was given of the histological appearance of its testicles. No cause for the condition was found.—R. G. Mares.

Schaetz. (1952). Die Möglichkeit der Testierung der Binneneber. (Kryptorchiden beim Schwein). **[Diagnosis of cryptorchidism in boars using the Allen-Doisy test.]**—*Rep. IInd Int. Congr. Physiol. anim. Reprod., Copenhagen,* 1952. **1,** 181-182. [In German. English and French summaries. Abst. from English summary.] **764**

S. recommended the use of the Allen-Doisy test for the diagnosis of cryptorchidism in the boar and stated that it had proved practically 100% accurate in the experiments made so far.

Hartwigk, H. (1952). Über eine angeborene Beinverdrehung bei Hühnerküken. **[Congenital dislocation of the hock-joint in fowls.]**—*Dtsch. tierärztl. Wschr.* **59,** 130-132. **765**

Case records of congenital skeletal disturbances of the tarsal elements in the forming hock joint characterised by rotation of the long axis of the limb.—C. W. Ottaway.

Hutt, F. B. & Sumner, J. B. (1952). **An egg encrusted with protoporphyrin.** — *Science.* **116,** 35-36. **766**

An egg with an abnormally pigmented shell was found in the oviduct of a four-year-old hen when killed for table purposes. The total amount of encrusted material was estimated as 12 g. The pigment proved to be protoporphyrin. —D. Luke.

Sharman, A. (1952). **An experimental study of post-partum endometrial repair in the guinea-pig and rat.**—*J. Endocrinol.* **8,** 162-168. **767**

In rats and g. pigs, *post-partum* endometrial regeneration proceeded equally well in ovariectomized animals, with or without doses of oestrogenic or corpus luteum hormone, as in normal controls.—R. Marshall.

Beattie, J. H. & Leaming, J. D. (1952). **Prophylactic and therapeutic use of aureomycin in retained placenta in cows.**—*Vet. Med.* **47,** 451-452. [Authors' conclusions modified.] **768**

Over a period of approximately one year, 612 cows with retained placenta have been treated with aureomycin pessaries with or without manual removal of the membranes. In 610 cows, there was no clinical evidence of infection or septicaemia. In two cows, where the membranes were only partially removed, acute metritis developed.

Payne, W. J. A. (1952). **Breeding studies.**—*Agric. J., Fiji.* **23,** 9-13. **769**

A description of investigations being carried out to discover how breeding policy may improve the production of the cattle, goats and pigs of Fiji.—E. J. H. Ford.

CARTER, T. C. & ROBERTSON, A. (1952). **A mathematical treatment of genetical recombination using a four-strand model.**—*Proc. R. Soc.* Ser. B. **139**, 410-426. 770

A mathematical treatment of genetical recombination is given, using a four-strand model.

See also abst. **553** (streptococci from uterus of mares).

ZOOTECHNY

GROBER, J. (1950). Wege und Ziele der Akklimatisationsforschung. **[Research on acclimatization.]**—*Z. Tropenmed. u. Parasit.* **1**, 445-458. [Abst. from English summary.] 771

G. described a comprehensive programme for research on acclimatization of human beings, animals and plants in the tropics and subtropics. The programme was drawn up before the second world war and still deserves international attention.

FURLONG, J. R. (1952). **The drying of hides and skins.** — *Colon. Pl. Anim. Prod.* **2**, 233-245. 772

A review of extensive African trials. Cattle hides are best dried stretched on frames, after washing and fleshing, with full exposure to air on both sides. F. gave alternative methods for use where timber for frames is not available. Sheep and goat skins can be similarly treated but may also be dried on lines.—S. E. FOX.

GRIGNANI, A. (1951). Il libro del mungitore, dell'allevatore del tecnico della stalla. **[A handbook of the husbandry of dairy cattle.]** pp. vi+194. Pavia, Italy: M. Ponzio. L.800. 773

This is a handbook written in popular style for dairymen and farmers. It contains chapters on anatomy, physiology, health and disease, reproduction, housing, nutrition, milking technique, diseases of the udder, rearing of calves and hygiene of the foot. There are 40 illustrations.—E.G.

HANCOCK, J. & MCARTHUR, A. T. G. (1951). **Tips on cow management arising from grazing behaviour studies.** — *Proc. Ruakura Frms Conf. Wk.* pp. 1-7. Wellington, N.Z.: Dept. of Agric. 774

From a study of grazing behaviour of cows it was concluded that pastures occupied at night should be as good as those grazed during the day. Supplementary food should be fed on low fertility parts of the pasture, and provision of adequate shade, shelter, and water are important.—G. B. S. HEATH.

AMSCHLER, J. W. (1952). Kreuzungen bei Haustieren. **[Crossbreeding of yaks and cattle.]**—*Proc. VIth int. Congr. anim. Husb. Copenhagen*, 1952. **1**, 33-36. [In German. English, French and Danish summaries. Abst. from English summary.] 775

The author reported on his own observations in Central Asia concerning yak × cattle crosses. He found a marked heterosis effect in so far as the crossbreds produced higher weights of meat and fat as well as meat only under the same environmental conditions for parent-stock and offspring.

Crossbreeding experiments with cattle in Austria were recorded. The crosses of Austrian cattle breeds with Shorthorn and Hereford bulls seem to be especially important.

TECHNIQUE AND APPARATUS

HEIN, H (1951). Die mechanische Zertrümmerung und Extraktion von Bakterien. **[Mechanical breaking-up and extraction of bacteria.]**—*Z. Hyg. InfektKr.* **132**, 519-528. 776

By means of the 'Vibro-Emulgor' streptococci, staphylococci, enterococci, *Salmonella* spp., *Bact. coli*, and *B. mesentericus* can be broken up by vibration, it is stated without killing them. Glass beads may be used in the apparatus if it is desired to kill them. When the organisms become an amorphous mass, water-soluble substances are dissolved.

—W. R. BETT.

LITSKY, W., MALLMANN, W. L. & FIFIELD, C. W. (1952). **Ethyl violet, a selective dye for the isolation of Gram-negative bacteria.**—*Stain Tech.* **27**, 229-232. [Abst. from authors' summary.] 777

Minimal inocula of Gram-negative and Gram-positive bacteria were seeded into tryptose broth containing varying concentrations of crystal violet, brilliant green and ethyl violet. Growth rates were determined for 2, 4 and 6 hours incubation. All three dyes were equally effective in inhibiting Gram-positive bacteria, but ethyl violet was less toxic to Gram-negative bacteria.

KITE, J. H., JR., PATNODE, R. A. & READ, T., JR. (1952). **Distinguishing saprophytic from virulent mycobacteria by intracutaneous inoculation of guinea pigs.**—*Amer. J. clin. Path.* 22, 250-254. [Authors' summary copied *verbatim*.] 778

The intracutaneous inoculation of guinea pigs has proved to be a serviceable method for distinguishing virulent from saprophytic mycobacteria. A dosage of 0·01 mg. has been adopted for routine use. It is believed that this technic would be especially useful in laboratories where budget or space limitations prohibit the testing of large numbers of guinea pigs. Advantages and disadvantages of the method are discussed.

BÜRKEL, F. (1951). Der Goldhamster als Versuchstier in der mikrobiologische Laboratoriumspraxis. **[The golden hamster, an experimental animal for microbiological laboratory practice.]**—*Z. Hyg. InfektKr.* 133, 160-168. 779

As hamsters had proved unsuitable for diagnosis of TB., they were tested against clostridia, *B. anthracis*, rabies, human bacillary dysentery, *Pasteurella, Salmonella, Brucella, Streptococcus pyogenes, Trypanosoma equiperdum* and *T. brucei*. As hamsters eat the carcasses of other hamsters that have died and therefore require individual cages and as there is no suitable vein for injection and intracardial injection is difficult, B. suggested that the animal is unsuitable.

—S. E. FOX.

AJELLO, L., GRANT, V. Q. & GUTZKE, M. A. (1951). **Use of mineral oil in the maintenance of cultures of fungi pathogenic for humans.**—*Arch. Derm. Syph., Chicago.* 63, 747-749. [Abst. in *Rev. med. vet. Mycol.* 1, 482. (1951), modified.] 780

Sabouraud's dextrose agar cultures of 264 strains of fungi, representing 15 genera and 34 species, stored under heavy mineral oil at the Communicable Disease Centre, Public Health Service, Federal Security Agency, Atlanta, Georgia, had remained viable for periods ranging from 9 to 22 months.

LEWIS, G. M., SACHS, W. & HOPPER, M. E. (1951). **Mycologic and histologic technics in the study of superficial fungous infections.**—*Arch. Derm. Syph., Chicago.* 63, 622-632. [Abst. from abst. in *Rev. med. vet. Mycol.* 1, 481. (1951).] 781

Information on laboratory procedures for the diagnosis of superficial fungal infections was presented under the headings of obtaining material for mycological examination, the fluorescence test, the direct mount, culture media and methods, stains, pathological findings, and interpretation of laboratory data.

MOUSSATCHÉ, I. (1951). Um método simples para obtenção de grandes quantidades de "Trypanosoma equinum." **[Method for obtaining *Trypanosoma equinum* in large numbers.]**—*Rev. milit. rem. Vet., Rio de J.* 11, 217-218. [English translation.] 782

G. pigs, four days after infection from mice, were bled and the blood citrated. Bean (*Phaseolus vulgaris*) extract was added to the blood till there was no further agglutination and the mixture kept at 5°C. for half an hour. The supernatant containing the trypanosomes was spun at 2,500 r.p.m. for 10 min. and the supernatant then replaced with saline and respun, the living trypanosomes being in the sediment.

—JAS. G. O'SULLIVAN.

STANTON, W. R. (1952). **A simple chamber for use in aseptic microdissection.**—*J. gen. Microbiol.* 7, 243-244. [Author's summary modified.] 783

A description of a Perspex chamber for a binocular microscope and the production and maintenance of sterility inside it.

WHITEHAIR, C. K., PETERSON, D. R., VAN ARSDELL, W. J. & THOMAS, O. O. (1952). **A liver biopsy technique for cattle.**—*J. Amer. vet. med. Ass.* 121, 285-287. [Abst. from authors' summary.] 784

The authors described a liver biopsy technique that has been used extensively with cattle. It permits the collection of samples of liver tissue weighing 1·5 to 2·5 g. and allows exploratory examination of the liver surface and adjacent region in the peritoneal cavity. [See also *V.B.* 16, 1905 & 22, 3926.]

See also absts. 678 (radiography of horses); 737-739 (milk as diluent for bull semen); 740 (semen stain); 796 (book, paper chromatography).

MISCELLANEOUS

I. MANIATAKIS, I. S. (1951). **[Horse breeding and the doping of racehorses.]**—*Delt. Hellen. kten. Hetair.* 2, 160-162. [In Greek.] 785

II. KINNAS, K. S. (1951). **[On pharmaceutical substances (dope) used in horse-racing as stimulants.]**—*Ibid.* 72-78. [In Greek.] 786

I. A condemnation of the doping of racehorses with stimulants (alkaloids), reasons for

objection to the practice, apart from the moral and other principles involved, being ill-effects on the constitutions of the doped animals, diminished fertility in both sexes when put to stud, and a lowering in the quality of the offspring.

II. A brief review of legislation, methods of administration and methods of detection of drugs employed in other countries (Germany, the U.S.A., Britain) written to establish a case for introducing a suitable system in Greece and for placing the work of detection in the hands of specialists with both veterinary and chemical training.—J. M. Tait.

Campbell, P. A. (1952). **Medical aspects of flight above the atmosphere.**—*J. Amer. med. Ass.* **150,** 3-6. **787**

A brief review is presented of the structure and characteristics of the atmosphere, of its high speed penetration by rockets launched at high initial speeds, of the medical problems involved, and of the requirements for flight above the atmosphere.—W. R. Bett.

REPORTS

U.S.A. Florida. (1952). **Report of the University of Florida Agricultural Experiment Stations for the fiscal year ending June 30, 1951.** pp. 277. [Items of veterinary interest pp. 56-66 & 113-119.] **788**

Items of vet. interest include the results of work on problems of mineral nutrition—in particular Ca,P,Mb,Cu,Zn—biological analysis of pasture herbage, beef yield and quality from various grasses, supplemental feeds for unweaned beef calves and for sows during reproduction and lactation, roughage for maintenance and growth of beef cattle, the effect of vitamins, antibiotics and stilboestrol on the growth of pigs, studies of ruminant stomach development, effects of antibiotics and chemotherapeutic agents on micro-organisms in dairy produce, feed flavours in milk and low milk fat due to feeding, infectious bovine mastitis, transmission agent of Fowl Leucosis, control of Liver Fluke Disease and of Anaplasmosis in cattle, factors influencing the development of Pullet Disease and the control of internal and external parasites in animals.—Charlotte M. Wood.

U.S.A. Iowa. (1951). **New findings for farm folk. A Report of the Iowa Agricultural Experiment Station for the two years July 1, 1949 to June 30, 1951. Part I.** [Andre, F. & Browning, G. M.] pp. 74. Ames, Iowa: Iowa State College. **789**

This report explains in simple terms recognised experimental findings which may be applied for practical benefits on a farming scale. Items of veterinary interest include the saving of feed and increase of weight of pigs fed supplements of vitamin B_{12} and antibiotics, dairy cattle inbreeding, milk substitute and the use of aureomycin for calves, fattening of lambs, comparison of hay and pasture with grain feeding for cattle, vitamin B_{12}, animal protein and antibiotics in poultry nutrition and the crossing of strains and breeds of poultry.

—Charlotte M. Wood.

U.S.A. (1951). **Annual report of the Massachusetts Agricultural Experiment Station for the fiscal year ending June 30, 1951.**—*Bull. Mass. agric. Exp. Sta.* No. 466. pp. 62. [Items of veterinary interest, Bullis, K. L., pp. 56-58.] **790**

Poultry disease control has occupied a large part of the programme carried out by the department of veterinary science. Mastitis associated with *Pseudomonas* infection is becoming very troublesome in some herds of dairy cattle.

—G. B. S. Heath.

BOOK REVIEWS

Newsom, I. E. (1952). **Sheep diseases.** pp. ix + 352. London: Baillière, Tindall & Cox, Ltd. 54s. **791**

In his preface, the author makes the point that sheep are numerous in undeveloped countries but decrease in numbers when farms become smaller. He assumes that this is due to disease and this fact has prompted him to write his book. The inference is that management for heavy production predisposes to disease, and it is a pity that no section of the book deals with the association of disease with varying systems of management.

Diseases are dealt with under the headings:—Infectious diseases due to bacteria, fungi, protozoa, viruses and rikettsiae; Parasitic diseases due to external and internal parasites. Non-infectious diseases are classed under the headings:—Deficiency, Neoplasms, Digestive, Respiratory, Urinary, Genital, Circulatory, Nervous, and Skin. There is an extensive section dealing with poisons, including plant poisoning.

Much helpful information on general diagnostic bacteriology is included where necessary. Diagnosis, control, and immunization are dealt with adequately. After each disease, a comprehensive list of references is given.

On the whole this book should be of great help to British veterinarians. Diseases which occur in Great Britain and not in the U.S.A. are adequately covered from the literature. Certain discrepancies inevitably are present. The term "lamb dysentery" is used in the U.S.A. for a disease analogous with calf scours in Great Britain. Also, not every British veterinarian would agree that abomasal worms are of more importance than those occurring in the small intestine. For the treatment of pregnancy toxaemia, 500 ml. of 10% dextrose intravenously is advised, together with 1 lb. of molasses *per os;* this is thought to give a high percentage of cures.

[A protest must be made against the practice in the U.S.A. and elsewhere of calling *Melophagus ovinus* the "Sheep Tick". This is a serious error. The difference in the biology of keds and ticks is such that the use of a common name is misleading.]

Binding, printing, and illustrations are of very high quality, and the index is adequate. Mistakes appear to be few, the only one noted by the reviewer being the measurement of phenothiazine in "cc's" on page 181. For those dealing with sheep diseases, this book can be highly recommended.—G. B. S. Heath.

Clark, W. E. Le. [Dr. Lee, Professor of Anatomy in the University of Oxford.] (1952). **The tissues of the body. An introduction to the study of anatomy.** pp. xi + 407. Oxford: The Clarendon Press. London: Geoffrey Cumberlege. 3rd Edit. 30s. 792

The first edition of this book in 1939 heralded a new approach to the subject of anatomy in that here was a treatise which dealt with the structural organisation of tissues in recognition of the fact that they were never static. Further, development, growth differentiation and adaptation were viewed as one continuous process, each placed in proper perspective. The approach was welcomed by all, and it could be generally said that here was a book of equal value to teacher and student. In this third edition the author has wisely kept to the same form and has merely amplified or re-written parts in the light of recent developments. If the first edition deserved a place in all biological laboratories, which it did, the compliment can be repeated now. If a particularly veterinary qualification is required, one can say that it is impossible to introduce a study of living tissues without reference to comparative forms.—C. W. Ottaway.

Götze, R. (1952). Dammrissnaht, Plastik der Vulva und des Scheidenvorhofes bei Stuten und Kühen. **[Repair of the perineum and plastic surgery of the vulva and vestibulum in mares and cows.]** pp. 52. Hanover: M. & H. Schaper. 4th Revised Edit. DM. 3.80. 793

This booklet deals usefully with the technique of surgical treatment of perineal rupture, labial and vagino-anal lesions and damage to the vulva and vestibulum following parturition in mares and cows. There are 31 very clearly reproduced photographs and diagrams.
—E.G.

Leuthold, A. (1952). Grundriss der speziellen Chirurgie für Studierende und Tierärzte. **[Special veterinary surgery.]** pp. 283. Basle: Ernst Reinhardt. Swiss Fr. 15.50. 794

This is one of the volumes in the publisher's series on "Veterinary Fundamentals" and as such is a concise treatise about the surgical diseases of domestic animals.

The material is arranged on a regional anatomy basis, starting off with diseases of the eye. Although the common domestic animals are all dealt with, emphasis is strongly on the horse, which would appear to be rather excessive, even for Switzerland.

The style is crisp and dogmatic and as such quite suitable for the purpose of the book. Students who wish for more information can easily obtain it in recent books on veterinary surgery in the same (German) language.

The book is of pocket size and strongly enough built to withstand transportation by its owner. The printing is pleasing and very clear and so are most of the photographs.
—J. Edwards.

Thornton, H. [Chief Veterinary Officer, City and County of Newcastle upon Tyne.] (1952). **Textbook of meat inspection. Including the inspection of rabbits, poultry and fish.** pp. viii + 646. London: Baillière, Tindall & Cox. 2nd Edit. 55s. 795

It is probable that most Veterinary Surgeons and Medical Officers concerned with meat inspection have already provided themselves with this book, but those that have not are strongly advised to do so. It may safely be said to cover the whole subject adequately though succinctly and is a vast improvement on the many authors who have merely tried to rewrite Oestertag's historic masterpiece.

In this second edition, a few small errors

have been corrected, some parts have been rewritten and somewhat improved and some figures and plates have been added; but the first edition was so excellent that no drastic improvement was required. In his preface, the author makes a point that deserves the widest publicity. So long as there was sufficient meat available to allow for condemnation of anything that departed from the normal, the inspection could be entrusted to comparatively uneducated men. Nowadays, however, it is vitally important that all meat that can be consumed with safety shall be made available for consumption; and this calls for a high level of education among the inspectors. This book is somewhat above the level of such men, but will be invaluable to those who are endeavouring to educate them.

—R. MACGREGOR.

BLOCK, R. J., LESTRANGE, R. & ZWEIG, G. (1952). **Paper chromatography. A laboratory manual.** pp. x+195. New York: Academic Press Inc. $4.50. 796

In this monograph many of the uses and adaptations of paper chromatography and ancillary techniques are summarized. The authors have concentrated on writing a practical up-to-date manual of the more important developments in paper chromatography and in this they have succeeded admirably. The book is divided into twelve main chapters; the first four deal with the History, Theory, General methods and Quantitative methods; each of the following group of compounds is given a chapter—Amino acids, amines and proteins; Carbohydrates; Oliphatic acids and steroids; Purines, pyrimidines and related substances; Phenols, aromatic acids and porphyrins; Miscellaneous organic substances; Antibiotics and vitamins; and Inorganic compounds.

In each chapter details are given for the preparation of the material to which the technique is to be applied, quality of filter paper to be used, preparation of solvents and type of separation obtained with each solvent, and finally methods and reagents for identifying the separated compounds on the filter paper. In most cases sufficiently detailed information is provided for a direct application of the technique without recourse to original publications. An adequate but not extensive bibliography is included. This book should be of very great help to those intending to use paper chromatographic techniques.—N. SABA.

BOOKS RECEIVED

[Notice of recently received books in this list does not preclude review.]

ABRAMSON, H. A. (1952). **Problems of consciousness. Transactions of the third Conference, March 10 and 11, 1952, New York.** [Sponsored by the Josiah Macy, Jr. Foundation.] pp. 156. New York: Josiah Macy, Jr. Foundation. $3.25.

BIESTER, H. E. & SCHWARTE, L. H. (Edited by) (1952). **Diseases of poultry.** pp. xiii + 1245. Ames, Iowa: The Iowa State College Press. 3rd Edit. $11.50.

BLAND, J. H. (1952). **The clinical use of fluid and electrolyte.** pp. ix+259. Philadelphia & London: W. B. Saunders Company. 32s. 6d.

BOURDELLE, E. & BRESSOU, C. (1953). Anatomie régionale des animaux domestiques. IV. Carnivores chien et chat. **[Regional anatomy of domestic animals. IV. Carnivora, dog and cat.]** pp. viii+502. Paris: J. -B. Baillière et Fils. Fr. 5000.

DOUTRESSOULLE, G. (1952). L'élevage au Soudan Français. **[The livestock of the French Sudan.]** pp. 374. Algiers: E. Imbert.

FLYNN, J. E. (Edited by). (1952). **Blood clotting and allied problems. Transactions of the fifth Conference, January 21 and 22, 1952, New York.** [Sponsored by the Josiah Macy, Jr. Foundation.] pp. 368. New York: Josiah Macy, Jr. Foundation. $4.95.

GAMBLE, J. L. (1951). **Lane Medical Lectures. Companionship of water and electrolytes in the organization of body fluids.** pp. 90. California: Stanford University Press. $2.50; London: Geoffrey Cumberlege, Oxford University Press. 20s.

GOLDSCHMIDT, R. B. (1952). **Understanding heredity. An introduction to genetics.** pp. ix +228. New York: John Wiley & Sons, Inc.; London: Chapman & Hall Ltd. 30s.

GREIG, W. A. (1952). **Banham's The veterinary surgeons' vade mecum. Formerly Veterinary posology and other information.** pp. 216. London: Baillière, Tindall and Cox. 8th Edit. 17s. 6d.

HAMMOND, J. (1952). **Farm animals : their breeding, growth, and inheritance.** pp. viii + 266. London: Edward Arnold & Co. 2nd Edit. 18s.

HARRIS, P. L. & KUJAWSKI, W. (Compiled by). (1952). **Annotated bibliography of vitamin E, 1950 and 1951. Vol. II.** pp. 106. New York: The National Vitamin Foundation, Inc. $2.

HARTWELL, J. L. (1951). **Survey of compounds which have been tested for carcinogenic activity.** pp. 585. Washington, D.C. Public Health Service Publications No. 149. 2nd Edit. $4.25.

LUDOVICI, L. J. (1952). **Fleming: discoverer of penicillin.** pp. x + 223. London: Andrew Dakers Ltd. 15s.

MCMEEKAN, C. P. (1952). **Pig production.** pp. 166. London: Whitcombe & Tombs, Ltd. 10s. 6d.

MILLAR, P. G. & RAS, N. P. (1952). **Manual of infertility and artificial insemination in cattle.** pp. xv + 339. London: Baillière, Tindall & Cox. 25s.

MÜLLER, R. W. (1952). Der Tuberkuloseablauf im Körper. [**The pathogenesis of TB. in man.**] pp. viii + 170. Stuttgart: Georg Thieme. DM. 24.

OLDROYD, H. (1952). **The horse-flies (Diptera: Tabanidae) of the Ethiopian region. Volume I.** *Haematopota* and *Hippocentrum*. pp. ix + 226. London: British Museum (Natural History). 40s.

REICHENOW, E. (1952). Doflein. Lehrbuch der Protozoenkunde. Eine Darstellung der Naturgeschichte der Protozoen mit besonderer Berücksichtigung der parasitischen und pathogenen Formen. II. Spezielle Naturgeschichte der Protozoen. Mastigophoren und Rhizopoden. [**Doflein's textbook of protozoology. Part II. Special biology of protozoa. Mastigophora & Rhizopoda.**] pp. iv + 366. Jena: Gustav Fischer. 6th Edit. DM 20.

REIFENSTEIN, E. C., JR. (Edited by). (1952). **Metabolic interrelations: with special reference to calcium. Transactions of the fourth Conference, January 7 and 8, 1952, New York.** [Sponsored by the Josiah Macy, Jr. Foundation.] pp. 262. New York: Josiah Macy, Jr. Foundation. $4.50.

SELYE, H. & HORAVA, A. (1952). **Second annual report on stress.** pp. 526. Montreal: Acta, Inc. Medical Publishers. $10.00.

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WARNER, J. N. (1951). **Dairying in India.** pp. xii + 380. Calcutta: Bombay: Madras: London: Macmillan & Co. Ltd. 25s.

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ERRATUM

V.B. **22,** abst. 3933.

It is regretted that, in error, in the abstract of the Administration report of the Director of Agriculture, Trinidad and Tobago for the year 1950, the statement was made that foot and mouth disease was present in that Colony. The administration reports have consistently noted the absence of foot and mouth disease from the Colony.

List of Abbreviations

A.I.	— artificial insemination
ant.	— anterior
A.P.F.	— animal protein factor
approx.	— approximately
aq.	— aqueous
av.	— average
B.A.L.	— British anti Lewisite (2,3 dimercaptopropanol)
b.p.	— boiling point
c.f.	— complement fixation
clin.	— clinical
coeff.	— coefficient
conc.	— concentration
c.s.f.	— cerebrospinal fluid
diam.	— diameter
dil.	— dilute(d)
E.I.A.	— equine infectious anaemia
equiv.	— equivalent
ft.	— foot (feet) [measurement only]
Hb.	— haemoglobin
H.I.	— haemagglutination inhibition
inj.	— injection(s)
insol.	— insoluble
Inst. (inst)	— Institute
i/m	— intramuscular(ly)
i/p	— intraperitoneal(ly)
i/v	— intravenous(ly)
i/d	— intradermal(ly)
lab.	— laboratory (-ories)
max.	— maximum (-al)
N.D.V.	— Newcastle disease virus
N.D.	— Newcastle disease
r.b.c.	— red blood corpuscles
r.e.s.	— reticuloendothelial system
R.H.	— relative humidity
s/c	— subcutaneous(ly)
soln.	— solution
suppl.	— supplement(s) (-ary)
std.	— standard
temp.	— temperature
therap.	— therapeutic
U.V.	— ultra-violet
vet.	— veterinary
vol.	— volume
w.b.c.	— white blood corpuscles
wt.	— weight
/	— per (*e.g.* wt./vol. m.g./lb. body wt.)

Bulletins on disease subjects written for farmers and "popular" articles of a similar nature are not included in the *Veterinary Bulletin*. Those of a sufficiently important nature are, however, included in *Index Veterinarius*; so also are certain review articles, presidential addresses, congress proceedings, etc., where the title conveys as much information as could be given in an abstract of a few lines. For information of this nature, readers of the *Veterinary Bulletin* are referred to *Index Veterinarius*, where titles of all publications indexed by the bureau are fully cross-referenced.

A list of annotations and reviews, classified according to subject, is now given in *Index Veterinarius*, being inserted at the end of each number. Such papers will not necessarily be dealt with in the *Veterinary Bulletin*.

The Editor will be glad to receive publications relating to Veterinary Science and cognate subjects in order that they may be dealt with in the *Veterinary Bulletin*.

Reports of Departments, Special Reports, reprints, etc., etc., should be sent as soon as they are issued.

Books for Review.

The Editor will be glad to receive books for review in the *Veterinary Bulletin*.